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THE PLATEAU OF THE SAN FRANCISCO PEAKS
IN ITS EFFECT ON TREE-LIFE.

BY

PERCIVAL LOWELL, A.B., L.L.D.,
Director Lowell Observatory, Flagstaff, Arizona.

I.

In the northern part of the territory of Arizona lies one of the most interesting regions of the globe. A long pine-covered plateau, seventy miles across, rises there out of the great American Desert, which by its character and situation affords exceptional insight into three worlds: our world that is, our world that was, and, lastly, such worlds as people space. All three opportunities owe circumstance to the same cause, the desert attribute of the land. Dryness of climate, which commends it for astronomic observation, furthers mundane research as well. For, just as absence of moisture has opened the heavens, so it has sealed the earth to its better understanding to-day. Lack of deposition in the past and slow detrition now have preserved the earth's records there in a perfection unattainable ordinarily. Little has happened to destroy them since the beginning of Tertiary times, with the result that one wanders through a petrified forest dating from the Cretaceous era yet looking as if its trees had fallen yesterday; or treads upon lava-beds so fresh of mien they suggest ejection of the day before which, in truth, have lain there for millions of years. Even human habitations may still be visited in cliff and cave dwellings of which the artificial stone-

work and utensils are so perfect that they seem but just abandoned, yet of which no certain traditional memory survives.

Due indirectly to the like cause is the opportunity of studying there some generic aspects of the world of to-day. For the desert character of the country has conduced to keeping it virgin of man's destruction until the advent of the lumberman a few years ago; while the altitude of the plateau, upon which, as on a dais, are set the San Francisco Peaks themselves nearly 13,000 feet in height, gives base to a corresponding rise in climatic conditions which epitomize within a few thousand feet of climb the flora through as many thousand miles of latitude.

Tokoschli (Wrapped in Cloud), as the Indians call the Peaks, not only makes, at times, a cloud islet in the vast blue sky of the desert, but is itself a geographic island for animals and plants. For the mountain mass rises in self-contained seclusion out of the surrounding waste, bearing on it an organic world of its own. Upon its slopes grow trees and flowers quite unlike those at its foot, vegetation whose congeners are found far north, sundered from these outlying waifs by hundreds of miles of void. Organically insular, it is not so much a single island as a series of such, rising in tiers one above the other. For, beginning from



the desert, no less than seven zones of vegetal and animal life are here set vertically on end, each complete in itself and exclusive of its neighbours. They reproduce in superposed succession the several floral and faunal zones one would traverse were he to journey thence northward to the pole.

Height above sea level is the first factor in their determination, their altitudinal ordering being as follows:

1. The Desert Zone.....	from	sea-level to	5,500 feet.
2. The Piñon Zone.....	"	5,500 feet "	6,500 feet.
3. The Pine Zone.....	"	6,500 feet "	8,500 feet.
4. The Fir Zone.....	"	8,500 feet "	10,300 feet.
5. The Spruce Zone.....	"	10,300 feet "	11,500 feet.
6. The Timber-line Zone.....	"	11,500 feet "	12,100 feet.
7. The Alpine Zone.....	"	12,100 feet "	12,610 feet.

They correspond to those occurring at sea-level in latitude:

- | | |
|-------------------|-------------------|
| 1. 25°-30°. | The Sub-tropical. |
| 2. 30°-35°. | The Intermediate. |
| 3. 35°-40°. | The Temperate. |
| 4. 40°-50°. | The Canadian. |
| 5. 50°-60°. | The Hudsonian. |
| 6. 60°-70°. | The Arctic. |
| 7. 70° northward. | The Polar. |

TREES

OF THE DIFFERENT ZONES OF THE SAN FRANCISCO REGION.

DESERT ZONE—to 5,500 ft.

I. Treeless.

PIÑON ZONE—5,500-6,500 ft.

II. Piñon. *Pinus Edulis*. Its central habitat is about 6,300 ft.; but on south exposures it climbs as high as 7,250 ft. (and even in one instance 8,100 ft.). Found thus on Observatory Mesa—very sparsely.

Cedar. *Juniperus occidentalis monosperma*. Habitat the same. Found on Anderson Mesa owing to southern slope exposure as high as 7,000 ft. Gives its name to the zone which is called in consequence the Cedar belt.

Juniper. *Juniperus pachyphloea*. A giant dwarf. A very handsome tree for its checkerboard bark. Often twelve feet in girth and but twenty-five feet high. Grows in the belt and rises somewhat higher than its associates; being common on the S.W. slope of Elden Mt. and sparsely on Observatory Mesa, at altitudes of 7,000-7,300 ft.

PINE ZONE—5,500-8,500 ft.

III. Alligator or Yellow Pine. *Pinus ponderosa*. Long straight needles in long sheaths of three, at times two, straggling. Bark bronze red with long furrows between. In the variety known as Black Jack the bark is black, in deep longitudinal furrows without trace of red. This is not only the characteristic but almost the only tree of the zone—ranging in elevation of habitat from 6,500 ft. to 8,500 ft. On the North slope of the San Francisco Peaks a fine specimen, ten feet in girth, I found at an altitude of 9,000 ft., which may be taken as its extreme upper limit.

White Oak. *Quercus Gambelii*. Common on the slopes of the mesa, at altitudes of 7,000-8,400 ft. Grows on the very top of Mormon Mt., where it is plentiful. Fringes all the mesas—and turns a beautiful yellow the middle of October. Seedlings turn red.

Holly Oak. *Quercus Ilex*. A single specimen of this apparently unknown tree exists on the south slope of the Observatory Mesa. It differs from the oaks, *Quercus Gambelii*, about it, by the holly-like points of its leaves and by having its acorns stalked not sessile.

June-berry. *Amelanchier Canadensis*, western variety. Of smaller leaves and stockier habit than its eastern relative. A rarish tree-shrub but growing here and there at elevations of about 7,000 ft. Found near Flagstaff to the north. One specimen on the Observatory Mesa.

FIR ZONE—8,500-10,300 ft.

IV. Douglas Fir. *Pseudotsuga Douglasii*. This superb tree is chiefly striking for the pale bronze of the largely furrowed bark. Its leaves show relationship to the

Hemlock, and differ from those of the Silver Fir, with which it is commonly associated by their less regular branchings and more feathery appearance. Its normal range is from 8,400 ft. to 10,300 ft. On northern slopes it descends lower, according to the plateau on which the rise stands, coming down on Mormon Mt. as low as 7,200 ft.

Silver Fir. *Abies concolor*. This tree, the Silver Fir of our eastern parks and gardens, grows at the same elevation as the Douglas Fir, being common on Elden Mt. and Mormon Mt. and southward on the hillocks. It is also found in the crater of the San Francisco Peaks, but is rare on their outer slopes. In bark it slightly resembles the Douglas Fir, but is much less pronounced both in furrows and tint. Its needles serve to distinguish it, being coarser, longer and recurved, flattening the leaf-base. Its twigs, too, are the stubbier.



THE PINE PLATEAU.
(*Pinus Ponderosa*.)

Cork Fir. *Abies subalpina*. A pictorial tree for the whiteness of its bark and the silvery sheen of its symmetrical young shoots. The chief tree in the interior of the crater of the San Francisco Peaks at elevations from 9,000 ft. to 10,100 ft. It also clothes the Peaks' outer slopes both on the southwest and on the north sides at from 9,500 ft. to 10,700 and 10,840 ft. respectively.

Rocky Mountain Pine. *Pinus Flexilis*. Needles in short sheaths of five at the ends of the branches. Bark silvery when young; black and closely scaled when old. Less plentiful than the firs and in localities absent where they are common. Its bark and dark green leaves give it a sombre look at a distance. It is the white pine of the west though quite unlike *Pinus Strobus* in appearance. Cones very large, six inches long and often starring the branches in threes or more.

Quivering aspen. *Populus tremuloides*. The only gorgeous bit of color at the turn of the leaf in the region is given by this tree, which in mid-October blazons the sides of the Peaks and high land round about with gold and orange, banding the mountain side in patches, at elevations of from 8,000 to 10,300 ft., and in rocky gulches ribboning them down to 7,100 feet.

SPRUCE ZONE—10,300-11,500 ft.

V. White or Engelmann Spruce. *Picea Engelmanni*. The white spruce of the west. It is the tree of the highest elevations climbing in company with the Fox-Tail Pine to the timber-line. It begins to appear on the south face of the Peaks at 10,230 ft., and passes up through the zone into the Timber Line Zone above it; its upper limit as a tree being 11,500 ft.



BOLE OF DOUGLAS FIR.
(*Pseudotsuga Douglasii*.
Hill south of Mormon Mt. 7,500 Ft.

Fox-Tail Pine. *Pinus Aristata*. Curved needles in sheaths of five, closely ranged for six to eight inches along the ends of the branches; the needles looking inward and giving the effect of a fox's brush. The bunches longer than in the Rocky Mountain Pine and more appressed. The tree's limits begin higher with those of the Engelmann Spruce at 10,680 ft., or 10,160 ft., according to exposure, but at the top are practically identical with them. The two form the only trees in the zone which extend from 10,340 to 11,500 ft., and, above 10,700 ft., share the ground equally between them.

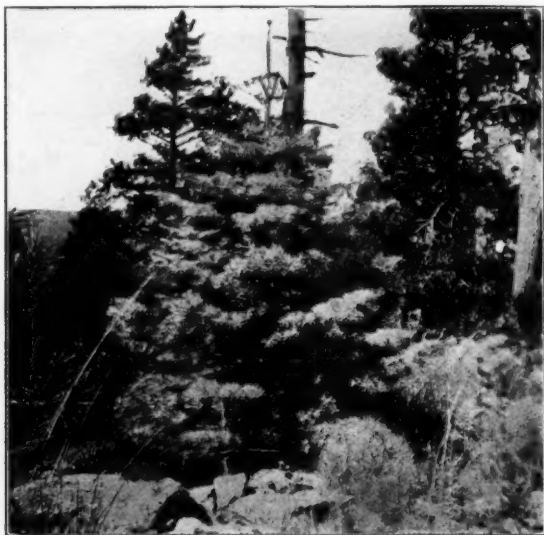
TIMBER LINE ZONE—11,500-12,100 ft.

VI. This is the zone in which the only two trees that can mount so high, the

Engelmann Spruce and the Fox-Tail Pine, struggle as gnarled dwarfs for precarious existence. Nearly prostrate along the rocks they cling, bowed down not two feet from the ground, climbing crouched up in one place on the southwest slope even to the crater rim. They cease to be trees at 11,500 or less, according to the exposure, and give up the struggle entirely at 12,080 ft., beyond which rises the naked rock, bare except for a few small plants.

ALPINE OR ARCTIC ZONE—12,100–12,610 ft.

VII. The pinnacles of the Peaks constitute this barren zone, which also descends in places down their flanks, reaching as low as 11,850 ft. and rising in Frémont to 12,100 ft., in Agassiz to 12,340 ft., and in Humphrey to 12,610 ft.



YOUNG SILVER FIR.
Top of hill, south of Mormon Mt. 7,900 Ft.

In describing the trees, an eye has been had to their identification; the object, one would suppose, of botanical treatises generally, if he had never consulted such. For what clear idea of separate identity is conveyed by defining the bark of one species as appressed and afurrowed and that of another as furrowed and appressed; or that the needles of one pine are from 3 to 10 inches long and those of a second from 4 to 7, even when that excellent shibboleth "pubescent," a favourite with this class of writers, is thrown in to boot? On the other hand, to say of the *Pinus ponderosa* (Yellow Pine), the *Pinus Flexilis* (Rocky Mountain Pine), and the *Pinus Aristata* (Fox-Tail Pine), that they respectively wear their hair unkempt, cut and

curled, is to give the unknowing instant recognition of the three trees at sight.

These several zones of vegetation topographize the country as with contour lines. For their chief determinant is elevation, because of the colder climate height brings about. They are, in fact, a complicated series of isotherms.

That it is the cold of elevation and not some other consequence of it is patent from the behaviour of the trees themselves. That thinness of air directly has nothing to do with it is shown not only by the identity of the species here at high altitudes with those at sea-



CORK FIR.
S. W. Slope of San Francisco Peaks. 10,000 Feet.

level farther north, but by trees *in situ* within a few miles of one another. Thus the Douglas Fir is to be found in the bottom of Walnut Cañon, at 6,000 feet, where the walls are precipitous enough partially to exclude the sun, though Yellow Pine alone grows upon the rim, and its own congeners are not to be met without rising 2,500 feet. It exists, too, in the Cañon, side by side with Black Walnut, Ash-leaved Maple, and such distinctively western species. In the wider and more exposed Oak Creek Cañon at 5,000 feet, where these same trees and the fine Oregon alder flourish, it is

absent. But cold also shows itself as cause in the fact that other factors beside elevation, pure and simple, play their part in thus allotting the several habitats of the trees. Slope-exposure is one of them. On the southern flanks of the Peaks and on the southern slopes of the lesser cones and summits of the region, the successive tree-lines are all pushed up, while on the northern they descend, and this to a difference of more than a thousand feet.

To the study of this factor, the character of the country has again most excellently contributed. For the elevations that rise



QUIVERING ASPEN.
San Francisco Peaks. About 9,000 Ft.

above the general level of the plateaux are, for the most part, cones of volcanic origin and cones of singularly symmetric shape. Since the close of the secondary period of the Earth's geologic history, that of Mesozoic times, the only great force at work here has been volcanic. After the disappearance of the inland sea which once overspread the region and continued as late as the Cretaceous era, the country became the theatre of vast extrusive action. The Peaks themselves are but the remains of a great crater wall of unknown antiquity; while all around them are smaller cones, the lava flows of which are still patent in the mesas at their feet. The mesa upon

which the Observatory stands is one of them, its malapais rock being the ancient lava, and its edge, overlooking Flagstaff, marking where that lava stopped; while a walk of four miles back upon it will bring one to Crater Hill and to the vent in its crater whence the flow poured forth.

The circularity of the cones simplifies the study of slope-exposure. For the approximate symmetry to the cardinal points sifts their effect from any others with something of the scientific exactness of a laboratory experiment. The cones are high enough to bring two



ENGLEMANN SPRUCE. FOX TAIL PINE. CORK FIR.
S. W. Slope San Francisco Peaks. 10,700 Ft.

or more of the zones into investigation, until in the case of the Peaks all are involved.

But a third factor is concerned in the establishment of a species habitat: the mass of land at the given height. It is not the absolute altitude alone that determines a tree's presence, but the amount of land at that altitude. A plateau at the same elevation acts very differently from a peak. It was to this point that the present research was particularly directed. The result justified expectation.

The investigation was conducted from the Observatory for base, through excursions and camping trips made by the director. The

Observatory itself lies in the pine zone at an altitude of 7,250 feet on the southeast edge of a mesa, 350 feet above the town of Flagstaff. Besides the pine, the edges of the mesa are fringed with a growth of white oak (*Q. Gambelii*), which extends back from the rim a few hundred yards and then curiously comes to an end. The trees, though rarely over thirty feet high, are of good girth, one within a stone's-throw of the house measuring eleven feet in circumference. When old, they become hollow and make homes for bees; and when they die are frequently replaced by a circular thicket of the next generation. Perhaps a fifth as numerous as the pines,



CAMP IN CRATER OF SAN FRANCISCO PEAKS.
Cork Fir. 9,350 Ft.

they divide with the latter the ground which they sparsely but regularly stud after the manner of an English park. A quarter of a mile away from the edge, the pines possess the mesa alone. The mature character of the trees, standing dignifiedly apart with just enough seedlings to keep up the race and replace the fallen ones that are turning slowly again to loam, shows that, except where the lumbermen have been, we here gaze on the primeval forest.

In the expeditions taken from this base, the heights at which particular species of trees were found were got by an aneroid checked

to agree with certain fundamental altitudes obtained from two trigonometric surveys. Necessary not only for the determination of the tree zones, it was essential also for the establishment of the general topography. For the government map was a creation of more artistic than scientific value, in which many of the depictions rose superior to fact. The new survey by Mr. Pearson Chapman promises to give us something in accordance with reality. From his survey, which agrees with the trigonometric determinations of Mr. A. E. Douglass in 1898, then of this Observatory, the following fundamental heights were obtained:

Humphrey Peak, 12,610 feet; Agassiz Peak, 12,340 feet; Cairn on Wing Mt., 8,545 feet; Observatory, 7,250 feet.

With these the aneroid was corrected to conform as nearly as possible. Without professing accuracy, the results were sufficient for the purpose.

II.

On September 11, the first exploration was undertaken; a camping trip to the Jack Smith spring. This spring, from which a long pipe-line round the hills supplies Flagstaff with water, rises in the crater of the San Francisco Peaks at a height of nearly 10,000 feet above the sea. The way to it lies along the Tuba City road to a point due east of the Peaks and thence up, over a ridge, into the crater. The crater is by no means perfect of form, but resembles a trough five miles long enclosed by high walls on three sides and winding through the fourth to an exit N. N. E. Its vestibule, so to speak, is entered over the ridge mentioned, and stands at about 8,500 feet. It is an open meadow from which one rises by a wooded valley a couple of miles to the lower spring (9,350 feet). In this crater, dominated above the trees by the far rampart of the bare crater wall, the lowest *Pinus Flexilis*, the Rocky Mountain pine, appeared at 8,750 feet, while the Yellow Pine straggled on two hundred feet higher till it gave over at 8,950 feet.

At 9,000 feet occurred the first specimen of the beautiful Cork Fir (*Abies subalpina*), which from there up became the chief tree of the forest. This surprising and truly spectacular fir is a peculiarity of the San Francisco Peaks. Relatively so unknown that botanists visiting the region are taken to see it at their own request, it has not yet found its way generally into the tree-books. Britton's recent exhaustive volume on the trees of North America, for instance, has no mention of it. Its cork jacket is its oddity, but this

does not detract from its superb beauty. Its bark, when youthful, is a lustrous white, and its silvery blue young leaves combine to an effect of color ethereality impossible to describe. It continues on some distance above the lower spring and is throughout associated with the Silver Fir (*Abies concolor*), the Douglas Fir, the Rocky Mountain pine, and the Quaking Asp, large patches of the latter replacing the Fir in disastrous fires of the past. A particularly bad one of these forest fires occurred some twenty odd years ago, high up on the southern walls in the spruce zone, too high for the scar-



FOX TAIL PINE. 11,200 FT.
Slopes greatly flattened by the camera.

healing Asp, and shows all its ghastly destructiveness to-day. The upper spring lies at 10,070 feet, and just above it occurs the first Engelmann Spruce at 10,100 feet in a dense forest filling an upper valley between Pigeon Ridge, so named for being a favourite resort of the wood pigeon,—a relative of the western carrier pigeon of bygone story,—and a high spur from Humphrey.

Over the end of this spur, on the morning following their arrival at the spring, Doyle and the writer struck into another more denuded gorge, north and west, and so to a long couloir of *débris*, up which they climbed at a steep angle. The first Fox-Tail pine on this

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slope, which fronted south, stood at 10,600 feet, crowning a promontory of rock bordering the couloir—one of the remnants of the old crater jaws. Some of these remains of Tertiary times were very fine, towering, castellated pinnacles of red rock, fangs in look as well as fact. When not too steep, they made perches for the Fox-Tail pine or the Engelmann Spruce, which thus overlooked not only the crater, but actually the dips between the peaks of the southern crater wall off into the desert, far vistas in vignette. The writer pushed up to a point somewhat below the crowning rampart of rock,



THE BABY BEAR IN THE TRAP.

the barometer (corrected) showing 11,400 feet, whence by giant strides he coasted down to Doyle through the loose gravel of the slide, a particularly exhilarating mode of descent. There on one of the promontories under the lea of a Fox-Tail pine, they had lunch at 11,200 feet, surveying the wildness and wandering in anecdote down the vista of time.

Not far from the bottom of the slide in the centre of the secluded ravine they passed on their descent a ruined hut, inside of which Doyle spied a rusty trap and in it the desiccated remains of a baby bear. The poor little chap must have been caught there the winter

before. This was the nearest they came to seeing any living thing beside the pigeons and an eagle, though mountain sheep and bear were here once plentiful. Properly doctored, it made a good bear-story on the return to camp; and would have made a better, had not the hearers, as invariably happens, doubted the only part of it that was true.

(*To be continued.*)

DECLINE OF FARMING IN SOUTHERN-CENTRAL NEW YORK.*

BY

RALPH S. TARR.

Professor of Physical Geography at Cornell University.

The farming population of parts of the East has suffered a general decrease for several decades as a result of westward migration, and of movement from the farms to the cities. The abandoned farms of hilly New England have been much talked about and, recently, attention has been directed to the similar condition in New York, where 20,000 farms are for sale.†

In connection with studies of the geology of southern-central New York, I have driven much over the country roads of this section, and have been astonished at the evidence of general decline in the farming industry, especially in the hilly sections. Abandoned houses in all stages of decay abound, and in some cases the forest is encroaching on the pastures. Generally, however, the farms themselves are not abandoned, but are worked by neighbouring farmers. Occasionally an abandoned schoolhouse is seen, and the less frequented roads have in many instances been left to the elements.

I have endeavoured to find out whether the region of my studies is declining more than other parts of the State, and if so, why. For the purpose of this study a group of seven counties was selected—Broome, Tioga, Chemung, Schuyler, Yates, Tompkins and Cortland—forming a fairly compact group extending from the Pennsyl-

* The statistics in this article are from the various reports of the National Census; and those for 1905, from the recent State Census.

† State of New York—Department of Agriculture—Bureau of Information and Statistics, Bulletin No. 1, 1906.

vania line northward nearly half way to Lake Ontario, and occupying essentially the area of my geological studies.

These counties lie entirely in the hilly plateau of southern New York, which extends from the Catskills westward to Chautauqua County and southward into Pennsylvania. The southern part is crossed by the Chemung and Susquehanna rivers, and by the divide between this drainage system and the St. Lawrence, toward which numerous valleys extend, two of them occupied by Cayuga and Seneca Lakes, whose heads lie in the area under consideration, and from which there is canal connection with the Erie Canal. Three trunk railway lines—the Erie, Lehigh Valley, and Delaware, Lackawanna and Western—cross the area, and there are numerous minor railways. The region is, therefore, well connected with other parts of the State.

In these counties are numerous villages and some large cities, the largest places being Binghamton, Elmira, Ithaca and Cortland. These cities are busy and growing places in a declining farming region.

The tables of population in our National and State census reports bring out very clearly the fact that the farming of this region is declining. From 1890 to 1900 the percentage of increase in the population of the whole state is 21.1 per cent., but in the seven counties selected, Cortland, Schuyler, Tioga and Yates show a decrease of population in the decade, and the other three, Broome, Chemung and Tompkins, do not approach the average increase for the State. The nearest approach is Chemung County, with an increase of 12 per cent.; but the State Census of 1905 shows a decrease for this county between 1900 and 1905.

The three counties that show gains in population have industrial centres which account for their growth. In Broome County are Binghamton, Lestershire and Union, all of which grew rapidly in the decade 1890-1900. If the growth in these centres be subtracted, the county as a whole shows a loss of 822 between 1890 and 1900, instead of a gain of 6,176. Chemung County includes Elmira and Horseheads, and if their growth be subtracted, there is a gain of only 557 instead of 5,798. This slight gain is due mainly to the growth of small villages in the broad, fertile valley of the Chemung River, and in no degree to the hill country. The increase in Tompkins County is due mainly to the growth of Ithaca, a University town. If its gain in population of 2,057 were deducted, Tompkins County would show a loss of 1,150 between 1890 and 1905.

In all the other counties, in which the total is a loss, not a gain, there would be increased loss if the growth of the larger villages

were omitted. The loss in Yates County would be increased 396 by the omission of Penn Yan; in Schuyler County, 339 by the omission of Watkins; in Cortland County, 424 by the omission of Cortland; and in Tioga County by similar amounts with the omission of Owego and Waverly.

These facts demonstrate the decline of the farming population in the upland of all the counties. A comparison with other counties of the State is interesting. Each of the four counties in this group which show a total decrease between 1890 and 1900, has a loss of over 3 per cent. Nine other counties in the State show a loss of population of over 3 per cent.—Allegheny, 4.0; Chenango, 3.2; Columbia, 6.4; Essex, 7.1; Lewis, 8.0; Madison, 5.5; Otsego, 3.8; Putnam, 7.2; Schoharie, 7.9. Four of these—Allegheny, Chenango, Otsego and Schoharie—are located in the same plateau area as the group of seven selected for study. Thus, eight of the thirteen counties in New York which show a loss in population of over 3 per cent. between 1890 and 1900 are situated in the plateau belt in which the seven selected counties lie; and others in this belt are saved from showing such a loss by the growth of industrial centres in the broader valleys.

This decrease in population is not wholly of recent origin. Owing primarily to the growth of Binghamton and Elmira, Broome and Chemung Counties show a steady increase in population from 1860 to 1905, excepting for the decrease in Chemung between 1900 and 1905. Cortland County, in spite of the growth of the city of Cortland, had a population of but 1,282 more in 1900 than it had in 1860. Schuyler County, in which there is no large town, shows a steady decrease in population from 1860 to 1905, having in the latter year a population 3,815 less than in 1860. Tioga County shows a decrease in population of 2,000 between 1860 and 1905; and Yates shows a decrease of 992 in the same period. The population of Tompkins County has increased since 1860, but, in spite of the growth of Ithaca, has in 1905 a population 490 less than in 1880.

This general decrease in population necessarily affects the conditions of farming, both the ownership and management of the farms and the output from the farms. Between 1879 and 1899 the average size of farms in the State has increased nine-tenths of an acre; but in six out of the seven selected counties the increase in average size of the farm is greatly in excess of this:—Broome, 5.6 acres; Chemung, 2; Cortland, 7.1; Schuyler, 10.5; Tioga, 2.3; Tompkins, 8.4. For some reason, the average size of farm in Yates County has decreased 10.7 acres.

The percentage of farm owners operating farms has decreased for the whole State 3.68 per cent. between 1889 and 1899.* Four of the seven counties show a greater decrease in percentage of owners operating farms than the normal for the State—Schuyler, 7.42 per cent.; Tioga, 4.81; Tompkins, 3.74; and Yates, 4.61.

Between 1889 and 1899 the percentage of cash tenants on the farms of the State as a whole has increased 1.98 per cent. In the seven counties under consideration only one (Broome, 2.04 per cent.) shows a greater increase than the normal; and only two others (Tompkins .08 per cent. and Yates .93 per cent.) show an increase in cash tenants between 1889 and 1899. In the four other counties the percentage of cash tenants has decreased. Hence it is evidently considered less profitable to rent farms in the area under consideration than in the State as a whole, the only exception being Broome County, which has a good market in a large city, and is crossed by a broad, fertile river bottom followed by two trunk railways.

Turning to the percentage of farms worked by share tenants, it is found that between 1889 and 1899 the State as a whole shows an increase of 1.70 per cent. One of the seven counties (Broome, .54 per cent.) shows a decrease in percentage of share tenants; but all the others show an increase far in excess of the normal for the State as a whole:—Chemung, 4.35 per cent.; Cortland, 3.40; Schuyler, 7.76; Tioga, 5.43; Tompkins, 3.66; Yates, 3.68.

These facts tell a story. With the decrease in population the average size of the farm is increasing in this region faster than the normal for the State, and the percentage of owners of farms is diminishing faster than the normal. It is not generally considered as profitable to pay cash for the use of the farm here as in the rest of the State, but working the abandoned farms on shares is increasing at a far greater rate than the average for the State. For reasons not worked out in this study, some of the counties depart from the average conditions of the area as a whole; but the explanation would doubtless be easy of determination if undertaken.

An attempt was made to examine the statistics of farm output, but the varying methods of recording these statistics in the several census reports made this inquiry of slight value. The output of grain, however, shows some significant facts. Between 1879 and 1899 the acreage in grain for the entire State diminished 544,757 acres, an average of 8,930 acres for each of the 61 counties of the State. Only two of the seven counties (Broome and Yates) reach

* This comparison is perhaps not warranted, since the Census of 1900 includes under "Owners," part owners, owners and tenants, and managers, while the Census of 1880 mentions only Owners.

the average, and three counties show a gain instead of a loss. On the average for the State, these seven counties should show a decrease of 62,510 acres devoted to grain raising, while in reality they have decreased only 8,219 acres. This indicates that, accompanying the diminution of population, there has been a tendency to adhere to the production of crops of the simpler kinds far in excess of the average for the State.

Examining the individual grains, it is found that the decrease in barley production is far in excess of the normal. The seven counties produced about one-fifth as much barley in 1899 as in 1879, while the State as a whole produced about one-third as much. In corn production the seven counties do not depart markedly from the normal. Wheat production for the State decreased 178,875 acres, or on the average of 2,932 acres for each of the 61 counties; but in these seven counties the total loss in wheat acreage is only 9,858 acres, two of the counties showing great gain and only three reaching the average loss per county. In rye production the State loses 67,507 acres between 1879 and 1899; but in these seven counties all but one show a gain, though there is a net loss for the entire group owing to the great decrease in rye production in Tioga County. The State, as a whole, shows a gain of 68,582 acres in oats; but the seven counties show a gain of 29,951 acres, or nearly half the total gain for the State. In buckwheat production the State has 1,366 less acres in 1899 than in 1879; but six of the seven counties show a gain in buckwheat acreage, and for the seven counties there is a total gain of 18,591 acres in buckwheat.

The tendency of these hill farms is evidently toward the simpler farm products, a tendency due partly to location and soil, partly to the fact that, with diminishing population, products requiring the least work are naturally grown. Dairying statistics would doubtless show this tendency even more markedly.

The facts stated above demonstrate a significant change in the farming population of this part of New York State. It is a serious condition and somewhat alarming, when we consider that, although exaggerated here, it is true of the State as a whole, that while other industries are progressing, agriculture, the basal industry, is not holding its own.

During several seasons of work in the region under consideration I have attempted, by my own observations as well as by talks with the people, to find out why there is this change. It is evident that the problem is a complex one, involving both general and local conditions, and social, economic and geographic factors. An ultimate

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analysis of the problem would be beyond the scope of this paper, though some of the significant factors may be mentioned.

Perhaps the most basal cause for the decline is the competition of products from other agricultural regions, notably the Mississippi Valley; but coupled with this is the failure of the rural population of this part of New York readily to adapt itself to the changed condition, and to modify the farm products accordingly. Lack of intelligent planning is evident on every hand—due in part, no doubt, to the discouragement of adverse conditions and to the natural selection by which many of the best have gone away and left the least worthy to till the soil. Accompanying this is widespread evidence of shiftlessness.

Without pretending to special farming knowledge, I make these statements with full conviction of their truth. No other interpretation can possibly be placed on the fact, frequently observed, that of two neighbouring farms with the same soil conditions, the same market facilities, and, in general, with the same possibilities, one is often neat, well tilled, well fenced, with large barns and freshly painted house, while the other is in a state of general decay and ruin. No other interpretation than shiftlessness can be placed upon the prevalent neglect of expensive farm machinery left out in the fields for the winter. Nor can any other interpretation, than lack of power to grasp opportunities, be placed on the fact that a person living in a city in one of these counties must buy cold storage chickens, and often eggs, and must go to the store for vegetables brought to town by rail, while he would gladly buy these of farmers if only they would give him the chance.

The country is hilly and much of the soil is thin, stony and naturally infertile, while constant tillage has caused it to deteriorate. One often sees a pasture or even a hay field red with sorrel, a clear sign of the poverty of the soil. The effort is made to cultivate the entire area, even though the yield of hay or grain is in places so slight as hardly to warrant the labour involved in cutting and storing it. Extensive farming is the rule, and of intensive farming there is rarely any evidence.

In this hilly region, as, indeed, in many other parts of the State, the roads are well-nigh impassable for a large part of the year,—in the winter because of snow; in fall and spring because of mud; in summer very often because of the horrible attempts at road-making with the "road machine," by which the road is piled up with sod and stones over which it is difficult to drive a buggy, and well-nigh impossible to draw a load. The farmer is, therefore, not only isolated

socially, but also, because of the wretched condition of the roads, cut off from a market for his products. In the hilly country the ruggedness of the topography still further increases the isolation, which is rendered still greater by the prevalent tendency to run the roads as directly as possible, regardless of grades. The towns and railroads offer markets for products of this region, but the difficulty is to get to the towns and railroads.

Social isolation is an important factor tending toward decrease in population for various reasons, but primarily because of the discontent which it creates in the brightest portion of the country youth. The houses are far apart, and the roads are bad, especially in those seasons when a measure of leisure would permit of social intercourse. In the valleys the electric railways are diminishing this objection, and the rural free delivery is doing much, in its way, to lessen the isolation of the upland farmer.

The combination of these adverse and unpleasant conditions, together with the opportunities for advancement in the villages and cities, draws away many of the farm youth, and usually the best of them. Again and again, on asking the history of an abandoned or decayed farm house, I have been told that the girl has married the village storekeeper, or is a clerk in the village store, one boy is a railroad conductor, another works in the factory, etc., while the parents are either dead, or, in their old age, are trying to carry on the farm as best they can.

Even in the uplands the farmers are prevailingly of American stock, large numbers of them of New England lineage. One cannot help admiring them for their desire to improve their condition; nor can we blame them for being dissatisfied with the restrictions of farm life in a section where the opportunities, at best, are but poor. It is, on the whole, praiseworthy that they should try, even on the farm, to give their families some of the comforts and luxuries which the city American demands. But the effect of all this, combined with the other factors, tends toward making life on the farm less attractive and to lessen the success of farming as a business.

The outcome of this tendency toward depopulation of the farming districts cannot but be unfortunate for the State as a whole. The State Census of 1905 proves the vital importance of the situation. It should be remedied, and one naturally inquires "What can be done?"

Education of the farmer is certainly of basal importance, and New York State is doing much in this direction through its State Agricultural College at Cornell University. To learn to care for the

farm and farm implements, to learn how to make the soil produce the most, and to learn what it is best to produce on a given farm, will help much; and such knowledge is sadly needed.

It is certainly true that much land is in crops which should be in pasture, and it is equally certain that not a little of the upland should be allowed to return to woodland, partly because the soil is too poor for crops, partly because the wood of the forest is needed, and partly to prevent the run-off of water and soil to the detriment of the better farm land of the valleys. In places, farming is being attempted where it cannot be a financial success, and, to this extent, the abandonment of farms is for the best. I am convinced that the State as a whole would be benefited by the abandonment of many thousands of acres of upland farm land to forest growth, preferably under State control.

The greater part of the upland, however, is suited to agriculture of one kind or another; but, to be made to produce to the utmost, it demands adequate connection with the markets. For this purpose good roads are required, and that need I should place above all others in importance, not even excepting education of the farmers. New York State has been backward in this respect. It can well afford to enter, even more vigorously than at present, into the work of good road building purely from the standpoint of the welfare of its farming population and the increase in the value of its farm products.

Even with agricultural education and the best of connections with the markets, it is very doubtful if the American farmer can in large numbers be retained contentedly on the farms of the less desirable and less productive uplands. His exodus is a sign of his energy and ambition. From many standpoints this is unfortunate, for the farm is an excellent training school from which so many of our best citizens have come; but it is natural and inevitable. This being the case, it seems certain that his place must be taken by others. Already there are vacancies to be filled, estimated by the State Department of Agriculture to number 20,000, and the number is probably more rather than less than this, and each year the number is increasing. The State has now entered actively into the effort to repopulate the depleted farming districts. We may expect, I think, as a result of this effort, to see foreigners replacing the native Americans who have gone or are ready to go. These people will be better content with their lot and will require less. On the whole, it seems the best solution of the problem; but for the fullest success it must be accom-

panied by the opening of better communications between farm and market.

What has been said is intended to apply only to the region under consideration; but most of it doubtless applies to most of the agricultural counties of the State. In the region selected, the conditions favouring the decline of farming are exaggerated, and hence its greater decline. These conditions may be briefly summarized as follows: This is a region of great ruggedness of topography, and, over part of the uplands, the soil is thin and poor. Moreover, in a large portion of the area, cities are few and scattered, and some sections of the upland are, therefore, remote from markets. Owing to the sparseness of population and the hilly topography, the roads are exceptionally bad. It is for these reasons that the depopulation of this part of New York is in excess of that of the agricultural sections in the State as a whole. But even here the condition is not hopeless, though it has come to be sufficiently bad to be alarming.

There are two possible outcomes, both of which involve a readjustment of the conditions of farming; for it is evident that, under the conditions of the past, the agriculture of these upland regions has in the main been a failure. One solution, and the one toward which the region has been tending, is that of an increase in extensive farming, such as dairying and the culture of buckwheat and other grains. This is the simplest solution of the difficulty and naturally the one toward which the region first tended. But it is not the wisest solution nor the one that must ultimately be adopted; for it necessarily means a diminished population and the turning of the land over to less useful purposes than it is capable of serving. While some sections are doubtless destined to return to the forest, and large areas to remain in pasture, there is much land now in pasture, or producing only small crops of hay and grain, that can be made to support a much larger population provided different crops are raised and more attention is given to the intensive farming of small areas of the better land. This will probably call for an entire change, not only in methods, but also in the farming population. It is doubtful if large numbers of American farmers will adapt themselves to these new conditions—at least judging from the past; it calls rather for men trained in close tillage and economy, such as are practiced in Europe.

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GEOGRAPHICAL RECORD.

AMERICA.

THE NORTH COAST OF ALASKA BADLY CHARTED.—Mr. V. Stefánsson, the ethnologist, now among the Eskimo of northern Alaska, has written a letter to a member of this Society in which he says:

"It seems to me that badly mapped countries need resurveying as much as unmapped ones require original exploration. Circumstances have brought this forcibly to notice in my own case. Trusting to a map used by whalers and others who navigate this coast, we followed a continuous line of sand bars from Point Barrow eastward to their end at the first point of mainland which should, by the chart, have accordingly been Point Tangent, east of which the chart gives a narrow bay (say 7 miles across) and then a point.

"We sailed in thick weather about 10 miles S. E. without finding land and then turned south thinking perhaps our compass was wrong on account of excess of iron in our cargo. After going a few miles farther, we got into muddy water and fresh—a river delta where none was indicated on the chart. Then, we tried to beat out but a change of wind suddenly lowered the water some 3 feet (it had been a storm tide) and we were aground. Before the wind changed to give us enough water, we should have had to wait two weeks; as it was, we froze up in, perhaps, the most unfavourable location on the whole coast—no game, almost no driftwood, and far from all places we thought at all desirable for wintering.

"As a matter of fact, there are few places between the Mackenzie river and Point Barrow where there is even a family resemblance between the earth, as the Lord made it, and the chart as the surveyors have made it. Nevertheless, even, after being many times deceived, I trust to the chart, now and then, thinking it may possibly be right this time; and I have found it almost right occasionally but no oftener than the law of chances prescribes. That it has scarcely suspicion of rightness has cost me a great deal this time—something in money, and more in deranged plans and hopes that turned out empty.

"With just my prismatic compass and such common sense as I can muster I hope to make a better survey of some part of this coast than has been put on paper so far. I could not make it much worse even with noteworthy incompetence. Any Eskimo who travels this coast can, in ten minutes, draw a useful chart of 100 miles of coast line. One can travel by it because it gives bays where there are bays, rivers where there are rivers, and islands wherever they exist. But the maps stamped 'corrected to 1906' have deep bays where the coast is straighter than where they chart it straight, isolated islands where there are unbroken chains, islands north of each other where there is only a single chain, running east and west and no rivers indicated where there are deltas 15 miles wide and stretches of fresh water far in the ocean.

"The delta in which we are stranded is a mass of islands, its front is some 20 miles wide and has all the typical deltoid characteristics. The 'Thetis Islands', discovered in 1889, have no existence apart from the chain of islands lying about 3 or 4 miles off Beechey Point and long before discovered and correctly placed by English explorers. I have gone over their location in steamers (1907 in the

Belvedere, 1908 in the *Karluk*) and in skin boats and neither have I seen them nor have the Eskimo who have had houses near there and hunted seal and bear for generations where the map has the islands placed."

INDEX MAP OF ALASKA.—A new index map of the Territory showing areas covered by topographic surveys has just been issued by the U. S. Geological Survey. On the back of the map is a list of the Survey's publications on Alaska, comprising 28 maps and 119 reports.

The value of the mineral output of Alaska to date is approximately \$148,000,000, including the values of gold, silver, copper, coal, tin, marble, and other minerals. The cost of the Survey's explorations in the Territory, since they began, in 1898, has been less than three-tenths of 1 per cent. of the total value of the mineral productions. Areas in Alaska amounting to 121,252 square miles have been topographically surveyed on a scale of 4 miles to the inch and 2,732 square miles on a scale of 1 mile to the inch. These surveys cover, respectively, 20.85 and 0.47 per cent. of the total area of Alaska. During the same period geologic reconnaissance maps have been made of 99,350 square miles and detailed geologic maps of 2,304 square miles.

A copy of the map, including list of publications, can be had on application to the Director of the U. S. Geological Survey, Washington, D. C.

MONEY FOR THE U. S. GEOLOGICAL SURVEY.—Congress has appropriated for the Survey, for the fiscal year, 1909-10, the sum of \$1,407,390. The largest items are: Geological surveys, \$225,000; topographic surveys, \$350,000; water resources, structural materials and fuel testing investigations, \$100,000 for each class; printing and engraving geologic maps, \$100,000; mine accident investigations, \$150,000. An appropriation of \$90,000 for the investigation of Alaskan mineral resources was carried in the urgent deficiency act. Other appropriations for rent of offices in Washington and for publications make the total amount provided for the work of the Survey about \$1,700,000.

PROGRESS OF THE NEW YORK STATE GEOLOGICAL SURVEY.—The *Report* of the State Geologist (N. Y. State Museum *Report* 61, Vol. 1) is prefaced by a description and plan of the new museum soon to be erected. The geologist's report notes the completion of studies of the rock geology about Rochester and certain other parts of western New York, and the continuation of Professors Kemp and Cushing's work in eastern and northern New York. A fact of some geographic bearing is brought out at two points: the origin of the basin of Lake Champlain, through the down throwing of a series of fault blocks. Work on the surficial geology has been carried on in several regions. From Professor J. B. Woodworth there are observations on the origin of Saratoga and Round Lakes and further study of marine conditions in the Champlain area. Professor H. L. Fairchild completes his studies of glacial waters in the Ontario region and Professor A. P. Brigham describes the Mohawk and Sacandaga lobes of the retiring ice sheet and the lake waters of the Mohawk Valley.

Dr. John M. Clarke, State Geologist and Director of the Museum, appends a novel and keenly interesting paper on the Beginnings of Dependent Life. Such conditions are illustrated from various Paleozoic fossils, with hints of the philosophic bearings of these early examples, upon all modern life.

Attention is invited to undeveloped resources in the form of considerable bodies

of oil shales in the Devonian formations between Canandaigua Lake and Lake Erie. It is proposed to complete a careful comparison of these rocks and those of Scotland, the latter representing an industry whose annual product has a value of \$10,000,000.

The Seismological station of the State Museum exhibits a considerable series of records, numbering 19 from October 1, 1906, to the same date 1907. An appendix is devoted to economic geology, with papers on Adirondack iron ores, on the mining and quarry industry in 1907, and on the iron ores of the Clinton formation. The last has already been noticed in the *Bulletin*. The output of mines and quarries for 1906 is valued at \$37,000,000 and includes thirty-five kinds of mineral and rock products. There has been recent growth in the iron mining of the Adirondack region and the industry shows promise for the future. A. P. B.

MINERALS OF ARIZONA.—Mr. William P. Blake, territorial geologist of Arizona, has issued a report, with this title (64 pages), on the minerals of the territory, their occurrence and association, with notes on their composition. He supplements the account with a few pages on the materials of construction to be found in the territory. Arizona is fortunate in the possession of building stones and other constructive materials in great variety and wide distribution. There are granites of various grades and tints, porphyries, andesites, and diorites, basalts, tufas, and sandstones. Limestones abound suitable for building or for lime production. Granite quarries at Prescott are supplying large cut stone of superior quality for the banks and other buildings. It may also be quarried at numerous other places. The tufas near Tucson are quarried extensively for building and a number of university buildings have been constructed of them. Lithographic stone, found to compare favourably with imported stone, occurs in a remarkable series of horizontal sediments about 32 miles east of Prescott. Clays for fine pottery, or for brick and tile making are abundant, limestones for lime making are accessible at nearly all points where they are needed, marble of fair quality is quarried at many places and excellent native pigments, consisting of hematite, are found, particularly in the Monumental Park mining district.

THE POPULATION OF BOLIVIA.—In the April number of the *Bulletin* of the Philadelphia Geographical Society (1909) Professor Isaiah Bowman discusses the distribution of the people of Bolivia. The article is illustrated by a set of five new maps and several photographs. The maps are: zones of altitude, boundaries, cities, and drainage; two population maps; and a map of the provinces. The chief conclusions are that 80 per cent. of the people, with a density of 2.5 per square mile, live upon 18 per cent. of the area, and 34 per cent., with a density of more than 20 per square mile, upon 5 per cent. of the area. The concentration of the population within the highland area is shown to be due but partially to the elimination of tropical heat thus effected. The rare air of the high plateau, as well as the cold, are unfavourable conditions which, for the white populations, are compensated by the mineral wealth found only in this section. The positions and sizes of the plateau cities are chiefly determined by the distribution of minerals and by their relation to the trade routes between the eastern valley basins and the Pacific coast. The eastern valley basins, at 8,000 feet, contain the densest populations in Bolivia. Their altitude is most favourable for climatic conditions, though they are poorly situated as regards access to the seaboard. The loftiest town of Bolivia is Aullagas, 15,700 feet; the lowest, Puerto Pocheco, 600 feet. The average elevation of the entire list of Bolivia's important towns is 8,900 feet.

The part of Bolivia between the 500 and 1,500 meter contours, the part most favourable, climatologically, for man, occupies but 15 per cent. of the area. Notes are added concerning the thinly populated and higher mountain and plateau tracts and the eastern tropical plains, and conclusions are reached concerning the future lines of population, development and growth.

ASIA.

HIMALAYAN EXPEDITION OF THE DUKE OF THE ABRUZZI.—The Duke of the Abruzzi and his party left Marseilles on March 26 on their way to the Himalayas. They arrived at Bombay on April 10 and left by train for the north. The party which accompanies the Duke consists of the Marchese Negrotto, Cav. Vittorio Sella, Cav. Filippo de Filippi, Signor Botta, and seven guides from Courmayeur, Italy. The Marchese Negrotto is the Duke's flag-lieutenant in the Italian Navy, Cav. Sella, whose remarkable skill as photographer is well known, accompanied the Duke on his former expeditions to Mount St. Elias, Franz Josef Land, and Ruwenzori. His illustrations have added not a little to the interest of the books published by the Duke. This is his second visit to the Himalayas and his photographs were one of the chief attractions of the account given by Mr. Douglas Freshfield of his explorations round Kunchinjunga, reputed to be the second highest mountain in the world. Cav. Filippo de Filippi also was the companion of the Duke on his polar exploration and, though he could not accompany him to Ruwenzori, he wrote the admirable history of that expedition which has recently been published.

Signor Botta, a member of the Duke's expeditions to Alaska and Ruwenzori, goes as assistant photographer to Sella. He has already had mountaineering experience in the Caucasus and Himalayas. Four of the seven guides have also had Himalayan experience. Joseph Petigax, who accompanied the Duke on his former expeditions, was for some time with Dr. Workman in his expedition in 1903 in Baltistan. Alexis and Henri Brocherel were with the expedition of Messrs. Longstaff, Mumm, and Brace, to the Nanda Devi group in 1907; and G. Savoie was with the two Swedish mountaineers who recently established a Himalayan record by climbing Kabru, 24,000 feet, in the Eastern Himalayas.

The Duke of the Abruzzi has not made his plans public and some conjectures on the subject have certainly been incorrect. The Rome correspondent of the *London Times* (No. 1,685, Weekly Edition) says that the Duke has no immediate intention of attempting the ascent either of Mount Everest or of Kunchinjunga in the Eastern Himalayas. The correspondent says, he has reason to believe, that the following statement is substantially accurate.

The Duke has arranged for the collection of coolies at Srinagar, Cashmere, which, of course, leaves no doubt that the Karakoram range is to be the scene of his explorations. The large proportion of guides in the party shows that his main object is climbing. The western part of the Karakoram has recently been explored by the Workmans. The central part of the range, however, contains the highest peaks of all, grouped round the great Baltoro glacier. It offers very tempting ground for a mountaineer and there is little doubt that here the choice of mountains to ascend will be made. The Baltoro glacier was explored by Sir W. Martin Conway, in 1892, when he climbed Pioneer Peak, 22,600 feet, to its south. It was revisited in 1902 by the Eckenstein-Guillarmod expedition, of which an account was published by Dr. Guillarmod on their unsuccessful attempt

to reach K2. To judge from the photographs which have been brought back, both of K2 and of other giants of the range, the formidable character of the climbing can hardly be exaggerated.

There can be little doubt that Mount Godwin Austen or K2, as it is more familiarly called, will be the first peak to be reconnoitred by the Duke's party. Should close examination prove that it is hopeless to attempt the ascent of this mountain, which ranks third among the highest in the Himalayas, the Duke is quite certain not to return empty handed. Even if he be not able to scale the 28,250 feet of K2, there are plenty of geographical discoveries to be made and other virgin heights to be climbed, especially beyond the main range. The region on the north of the Karakoram has been little explored and, as both the Duke and his flag-lieutenant Negrotto are fully qualified for topographical work, some valuable addition to our knowledge of the trans-Himalayan country may be expected.

POLAR.

ANOTHER EXPEDITION BY DR. BRUCE.—Reuter's Agency reports that Dr. William S. Bruce, the leader of the Scottish Antarctic expedition, has made detailed plans for another south polar expedition, under his command, to leave Great Britain in 1911. He estimates the cost of the enterprise at \$250,000.

It is proposed to carry on extensive oceanographical work in the South Atlantic Ocean between and south of Buenos Aires and Cape Town, as well as in the Weddell and Biscoe Seas; to map the coast line of Antarctica to the east and west of Coats Land, and to investigate the interior of Antarctica in that longitude. Part of the project includes a journey across the Antarctic Continent, starting at some suitable base in the vicinity of Coats Land and emerging at McMurdo Bay, Victoria Land, or at King Edward VII Land.

Several motor sledges of a small and handy type will be used, as well as ponies and dogs. The ship will not remain at the winter quarters, but after landing stores and equipment for three years and refitting at Cape Town, will proceed to New Zealand, and thereafter, during the second season, to McMurdo Bay or King Edward Land, in order to lay out caches for and to meet the explorers emerging on the New Zealand side of Antarctica.

The programme includes a circumpolar bathymetrical survey especially in relation to the study of former continental connections. The Coats Land station will be relieved during the third season.

AMERICAN ANTARCTIC EXPLORATION URGED.—At the annual meeting of the American Philosophical Society, in Philadelphia, on April 22, the desirability of the participation by the United States in Antarctic exploration was urged by a number of speakers, including Rear Admiral Melville, Edwin Swift Balch, and Henry G. Bryant. The general view expressed was that the United States should organize an antarctic expedition to corroborate the surveys of Lieut. Charles Wilkes of the United States Navy, who was the first man to sight the vast continent which Shackleton has now penetrated nearly to the South Pole. At the end of the discussion, this resolution was adopted:

Resolved, That the American Philosophical Society requests the coöperation of the scientific and geographical societies of the United States, to urge on the United States Navy and the general Government, that it make sufficient appropriations to fit a Government vessel to thoroughly explore and survey the coast of Wilkes Land, and other parts of Antarctica.

CLIMATOLOGY.

GERMAN UPPER AIR INVESTIGATIONS IN TROPICAL EAST AFRICA.—To the *Quarterly Journal* of the Royal Meteorological Society for January, 1909, Dr. Richard Assmann contributes a short account of the results obtained by the German aerological expedition for the exploration of the upper air in tropical East Africa between July and December, 1908. Twenty-three balloons were sent up from Lake Victoria, fifteen being recovered, with the instruments. On the two highest ascents, 65,000 feet and 56,000 feet, the upper "isothermal layer" was found, for the first time in the actual equatorial belt. This warm stratum had been discovered by Teisserenc de Bort and Assmann, in Europe, and its existence, above North America had been established by Rotch. The minimum temperature encountered, at 65,000 feet, was -119° . The variability of temperature in the very high strata, which has been shown to be a fact over Europe and North America, was found to have nearly the same value over equatorial Africa. On two ascents, at 56,000 feet, -105° and -62° were registered. Pilot balloons showed an uppermost current blowing from nearly due west above the regular easterly current of the equatorial region. The lower strata, below the trades, were controlled by diurnal and seasonal winds, particularly by lake breezes, which generally prevailed up to 3,000-4,000 feet above the lake level. At Dar-es-Salaam, pilot balloons, one of which reached 66,000 feet, went with the easterly trade as far up as 13,000 feet; it then returned to the east in a higher stratum of 26,000 to 33,000 feet, and then again to the west in the highest levels.

R. DEC. W.

RAINFALL OF WALES.—In the *Geographical Journal* for March, 1909, a paper by G. B. Williams deals with the mean annual rainfall of Wales and Monmouthshire. The map, which accompanies the discussion, shows the distribution of the rainfall in greater detail than does any map hitherto published. The heaviest rainfall is in the portion of the Carnarvon Mountains with a radius of about two miles from the center of Snowdon. Here the average fall is over 150 inches a year. At Glaslyn, on the lee of the summit, and within the Snowdon crater, the mean rainfall is apparently nearly 200 inches. An area of about 170 square miles in these mountains has a rainfall of more than 100 inches per annum.

R. DEC. W.

VARIOUS.

At the recent meeting of the Association of American Geographers held in Baltimore in December last, it was voted to appoint a committee of five to consider the question of geography for secondary schools. Professor W. M. Davis, President of the Association for 1909, has appointed the following as members of the committee and has requested a report at the next meeting of the Association: Professor R. S. Tarr, Cornell University; Professor A. P. Brigham, Colgate University; Professor R. H. Whitbeck, Trenton State Model School; Professor C. F. Marbut, University of Missouri; Professor Richard E. Dodge, Teachers College, Columbia University (Chairman).

Professor G. G. Chisholm, of the University of Edinburgh, has been appointed Secretary of the Geographical Section of the British Association for the Advancement of Science for the approaching Winnipeg meeting.

Professor R. S. Holway, of the University of California, is to conduct a camping summer school in the Santa Cruz mountains from June 21 to July 3, 1909. Especial attention will be devoted to the topography of the San Andreas Rift of 1906, to the dissection of the peneplains, to the relation of topography to structure, to evidence of former ocean heights and to the stream development in the region.

R. E. D.

OBITUARY.

JULIEN MANÈS.—The Bordeaux Society of Commercial Geography announces the death, on April 2, 1909, of Mr. Julien Manès, Honorary General Secretary and member of the Council of the Society.

D. JULIÁN SUÁREZ INCLÁN.—We regret to record the death of Señor D. Julián Suárez Inclán, the distinguished President of the Royal Geographical Society of Madrid, which occurred in that city on March 9, 1909.

JEAN-BAPTISTE DU FIEF.—Professor Jean-Baptiste du Fief, the venerable Secretary-General of the Royal Belgian Geographical Society, died on December 13, 1908, at the age of 80 years.

THE AMERICAN GEOGRAPHICAL SOCIETY.

PRESENTATION OF THE SOCIETY'S MEDALS.—A regular meeting of the Society was held at the Engineering Societies' Building, No. 29 West 39th Street, on Tuesday, April 20th, 1909, at 8.30 o'clock P. M.

President Huntington in the chair.

The occasion was marked by the presentation of the Cullum Geographical Medal to Professor William Morris Davis of Harvard University and by the President's announcement of the two latest awards of the Cullum and Daly Medals. President Huntington said:

"It is my exceptional and agreeable duty, this evening, to announce, in the name of the Council and members, the awarding of three gold medals of this Society, and I need scarcely say that they are to be given to men so distinguished by their achievements throughout the whole scientific world, that such an offering takes first the pleasurable meaning of a tribute before it can be construed as a distinction.

"It is unfortunate that it is not our privilege to have with us all of those we thus desire to honour. Science, having no country, has distributed her quiet workers far apart, and in regard to two at least, I must regretfully announce that one is at present in China, and another in the Argentine Republic.

"The Daly Medal, founded through the generosity of our former President, Judge Charles P. Daly, has been awarded to the Honourable William W. Rockhill, our Minister in China, in consideration of the scientific value of his two journeys of exploration in that country, and in Mongolia and Tibet during the years 1888 to 1892, and in further consideration of the value of his numerous additions to the geographical nomenclature of Tibet, his knowledge of Eastern languages, and writings on Oriental subjects.

"The Cullum Medal has been awarded to Mr. Francisco P. Moreno, regarded as the leading scientific geographer of the Argentine Republic, and one of the foremost anthropologists of any country. He made extensive explorations in the

Andean region and in Patagonia, before the year 1900, his journeys extending over thousands of miles, in the exploration of rivers, lakes and mountains, of many of which he was the discoverer. He is the distinguished founder of the La Plata Museum, of which he was Director from 1879 to 1907.

"Last year, your Society decided to award the Cullum Medal to Professor William M. Davis, who, on this occasion, is fortunately able to be present.

"There is a peculiar privilege for us to-night in this meeting of welcome, for Professor Davis himself represents to us that broad intellectual endeavour which is forming a veritable new world. When we consider that the reality of our universe exists, for anyone of us, only as he or she can conceive of it, that each new added fact or grouping makes it broader and grander, so that the future human being may be imagined as inheriting a world immeasurably greater from the mere possession of more of its profound secrets, then we must turn to such men as these with that gratitude which springs up within us for the gifts of pure altruism with which they free our souls, and for which we can never render back just payment. This medal, then, must become a symbol. In itself it is nothing; but in its signification, it represents the expression of our sincere admiration, and our profound gratitude for human achievement by human will.

"Professor Davis, in the name of the American Geographical Society, I present you with this medal."

Professor Davis responded as follows:

"It is a great honour to receive the Cullum Medal from your hands, Mr. President, and all the more so because you announced at the same time the award of medals to two explorers, Rockhill, widely known for his travels in inner China, and Moreno, of Argentina, famous for his journeys and surveys in Patagonia. My own studies stand in strong contrast to what these geographers have done, for although my travels have led me into all continents, except Australia, my work has never had the quality of new exploration, but rather that of re-exploration in search of the explanatory and systematic description of districts already known in a general way. That work of this character should win your approval is a great encouragement to persevere in it and to carry it forward as far as lies in my power."

The following persons, recommended by the Council, were elected to Fellowship:

M. Orme Wilson,	James J. Higginson, Jr.,
William Patten,	Charles H. Tweed,
Most Rev. Archbishop John	Cortlandt Irving,
M. Farley,	Dr. William Sturgis Bigelow,
E. H. Locatelli,	Henry E. Huntington,
Robert Goelet,	Ora Howard,
Granville R. Fortescue,	C. Temple Emmet,

George B. Agnew.

Professor Davis then addressed the Society on "The Lessons of the Colorado Canyon." (An abstract of the lecture will appear in the *Bulletin*.) Stereoptican views were shown.

On motion the Society adjourned.

GEOGRAPHICAL LITERATURE AND MAPS.

(INCLUDING ACCESSIONS TO THE LIBRARY.)

BOOK NOTICES.

In Wildest Africa. By C. G. Schillings. Translated by Frederic Whyte. xvi and 716 pp., and over 300 Photographic Studies direct from the Author's Negatives, taken by Day and Night; and other Illustrations. Harper & Brothers, New York and London, 1907. Price, \$5.

Few authors become famous in two or three months as Mr. Schillings did when his first book, "With Flashlight and Rifle" was published in Germany. England had not yet heard of the book when a stray copy got over to America, and, a few days later, one of the newspapers filled two pages with pictures and stories of African photography and extracts from Schillings's book. As quickly as they could be issued, English translations of the book were published by two New York houses. The British edition was almost as promptly forthcoming and Schillings was famous.

The present book contains the second series of Schillings's studies of wild African life. The volume fittingly supplements the first book. The reason why his books are so remarkably successful is that the photographs with which he illustrated them stand in a class by themselves, and Schillings created it. The 600 photographs in his two books are not all good ones, but not one of them is retouched, and every picture has the merit and the fascination of being a trustworthy record of a scene visible in the wilds of Africa by day or revealed in the darkness by flashlight. Schillings provided something brand new for nature lovers, and this is the reason of his success.

The letterpress in this new book is another series of impressions drawn from the author's long experience of life, sounds, scenes, hunting and photography in the African wilds, with further emphasis upon the importance of taking active steps to prevent the complete extermination of wild life. It is gratifying to hear that Mr. Schillings hopes before long to secure a new collection of "Nature Documents," as Dr. Heck designates his photographs.

The War of Moslem and Christian for the Possession of Asia Minor. By Prof. W. M. Ramsay. pp. 281-301 in "Studies in the History and Art of the Eastern Provinces." Hodder & Stoughton, London, 1906. Price, 20s.

The Rede Lecture for 1906 in the University of Cambridge. The war between Christian and Moslem for the soil of Asia Minor began with the invasion of the Cilicia by the Mohammedans in A.D. 641 and ended, in a certain sense, with the definitive conquest of Cilicia by Sultan Selim about 1516. Prof. Ramsay does not attempt, in the limits of a single lecture, to sketch, even in outline, the events of nearly 900 years of war; but he depicts the character of the struggle and the nature of the two powers, the two systems of religion and society which "disputed with one another the possession of what was at one time the richest and

most highly civilized part of the world, the peninsula of Anatolia or Asia Minor." The geographical fact of greatest importance relating to this long struggle is that the scene was generally in Asia Minor, "the peninsula which bridges the sea and offers the best road and the chief battle ground" between Asia and Europe.

La Champagne. Étude de Géographie régionale. Par Dr. Émile Chantriot. xxiv and 316 pp., 52 half-tone Illustrations and Diagrams, 17 Maps, and Index. Berger-Levrault & Co., Paris, 1906. Price, 8 fr.

A geographical study of great merit based, as all geography should be, on the geology which has so prominent a part in shaping the land forms. Champagne is a distinct geographical unit, mostly plain, presenting strong natural contrasts to the surrounding regions and offering a fine field to the student of regional geography. Dr. Chantriot describes the land forms and their evolution, natural differences which geological and climatic influences chiefly have produced, the hydrography, the dissimilar features and the causes of them, and the influences of these and other factors upon the development of vegetable and animal life, and especially upon the human inhabitants and their personal and economic characteristics. Advanced students will find profit and enjoyment in reading this book.

On the Borders of Pigmy Land. By Ruth B. Fisher. ix and 215 pp., and 32 Illustrations from Photographs. (No index.) Fleming H. Revell Co., New York, 1905. Price, \$1.25.

Mrs. Fisher writes of the country of Toro, an independent kingdom north-west of Uganda and 200 miles further inland, where she and her husband lived in the missionary service. Her cottage was within sight of the snows of Ruwenzori. She was gladly welcomed by the Batoro, who invited missionaries to come, and have been influenced to a remarkable degree by these teachers. She is the first to give a detailed description of this country and its people, their home life, the king and his family, the religion, language, industries, and amusements. There are chapters also on the climb up the west slope of the Ruwenzori range, for Mrs. Fisher was one of her husband's companions on his ascent to the snow line in 1903; and on the long tramps across the four kingdoms of the Uganda Protectorate and to Lake Albert Edward through swamps of the Semliki River and into the fringe of the Congo State, where she saw pigmies and cannibal tribes. The author has humour and descriptive talent, and her pen pictures are as graphic as the excellent photographs. The work was written before the Duke of the Abruzzi had conquered the Ruwenzori summit, and Mrs. Fisher's remarks need emendation when she says:

To scale Ruwenzori's highest point must remain an impossible task. No one could endure the penetrating cold for the period of time required to master the prolonged and precipitous heights.

Ein Siedlungsvorschlag für Deutsch-Südwestafrika. Von Dr. Jur. V. Fuchs. viii and 100 pp., and Map. Dietrich Reimer (Ernst Vohsen), Berlin, 1907. Price, M. 2.

This is a study of the conditions of land-holding in German Southwest Africa, written by a lawyer who has been a government official and a judge in the colony. The book is both practical and philosophical and will meet the need of colonists and of students of colonial policy. The author outlines advantages and drawbacks that were met in the development of newer parts of the world, as

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Australia, South Africa and North America. The primary essentials of agricultural development are land, capital, and labour; and, in more detail, the settlement of new lands requires a liberal credit system, so that farmers with small or no capital may get a foothold, protection for life and property, guaranteed rights in property, trade, postal and telegraph routes, customs and transportation tariffs that are not oppressive, scientific surveys of property lines, life and property insurance, banks, good schools, libraries, religious toleration and governmental and private agencies for the promotion of colonization and colonial interests.

Dr. Fuchs applies these principles to German Southwest Africa in the recent initial stages of its development and under the favourable and unfavourable natural conditions. It is a clear and excellent study of the system developed to meet conditions of settlement that are more or less difficult. The sketch map shows the area and distribution of the crown and native lands and of those which have been conceded to development companies.

Jarðskjálftar á Suthurlandi, eftir Thorvald Thoroddsen. Gefið út af Hinu Íslenska Bókmentafélagi. Kaupmannhöfn, 1899.

(Earthquakes on the South Coast of Iceland, by Thorvald Thoroddsen. Published by the Icelandic Literary Society. Copenhagen, 1899.)

This Icelandic volume of 199 pages gives not only the results of Thoroddsen's own studies throughout the southern lowland and southern coastal ranges of Iceland, but a historic survey of earthquakes in that section from the year 1013 to the destructive one of 1896. There are recorded in the Sagas and Annals of Iceland (and there summarised), earthquakes as follows: In the eleventh century, 1; in the twelfth, 4; in the thirteenth, 3; in the fourteenth, 7; in the fifteenth, 0; in the sixteenth, 8; in the seventeenth, 10; in the eighteenth, 14; in the nineteenth, 10. Some of the earthquakes recorded as one really consisted of shocks several days apart; some were accompanied or associated with eruptions from Hecla and other south coast volcanoes; more than half of these earthquakes resulted in loss of life. Many even of the oldest records give specific data of scientific value, such as describing the change in the course of rivers, the breaking out of springs and appearance and disappearance of geysers. The study of the shocks that followed each other from August 26 to September 10 is carried through in considerable detail and occupies pp. 40-110 inclusive. Pp. 111-197 are occupied with an appendix giving descriptions of the 1896 earthquake by various observers and tables of the damage done to houses and meadowlands. The volume is accompanied by a geological map of the southern lowland of Iceland, in colors.

V. S.

Land skjálftar á Íslandi, eftir Thorvald Thoroddsen. Annath hefti at "Jarðskjálftar á Suthurlandi." Gefið út af Hinu Íslenska Bókmentafélagi. Kaupmannhöfn, 1905. (Earthquakes in Iceland, by Thorvald Thoroddsen. II. Second Volume of "Earthquakes on the South Coast of Iceland." Published by the Icelandic Literary Society. Copenhagen, 1905.)

This second part of Dr. Thoroddsen's volume of earthquake studies in Iceland makes the work a more or less complete survey, historically and geologically. Pp. 201-213 are occupied with a historical summary of 32 recorded earthquakes on the Faxaflói Bight. These are from the years 1663 to 1889; that the records do not go farther back is interpreted by the author to mean that the

people of the district were so used to minor disturbances that they were not considered worth recording, while no very destructive ones occurred. A review of the evidence shows that no earthquake that was severe on the south coast was also severe on the Faxa Bight—in other words, the two are distinct districts or zones of earthquake disturbance.

For the north coast of Iceland 24 earthquakes are recorded between 1260 and 1899 (pp. 213-233). Pp. 224-263 are a general summary of our knowledge of earthquakes and volcanic eruptions in Iceland between 900 and 1900 A.D., and the last five pages of the volume are devoted to a consideration of how Iceland may be divided into distinct earthquake districts. V. S.

Negerleben in Ostafrika. Ergebnisse einer ethnologischen Forschungsreise. Von Dr. Karl Weule. 2nd Edition, xii and 514 pp., 196 Illustrations, Map and Index. F. A. Brockhaus, Leipzig, 1909. Price, M. 10.

Dr. Weule is a professor at the University of Leipzig and Director of the Ethnographical Museum. His book gives a deeper insight into the life of the aborigines of the southeastern part of German East Africa than is often found in similar writings, for the work is of a popular character. The territory to which his routes were confined, lies between the Lukuledi and Rovuma rivers, the latter forming the tortuous boundary between the German Colony and Portuguese East Africa. The author made himself well acquainted with a considerable number of tribes in this region, and his special effort was to enter into the inner life of the natives. At the same time, his book is meant, first and foremost, for the general reader. It is in the form of a series of letters, in which the author describes many phases of the life of the natives, striving always to get beneath the surface, to see the world from the black man's viewpoint and to learn the nature of his primitive philosophy and what he thinks about. The scientific results of the expedition will be presented elsewhere, but this book is certainly illuminative in its portraiture of the every day experiences of some of the natives in tropical East Africa.

Archhelenis und Archinotis; Gesammelte Beiträge zur Geschichte der Neotropischen Region. Von Hermann von Ihering. pp. 530. Leipzig, Verlag von Wilhelm Engelmann, 1907.

The author has collected in this volume of 350 pages some results of his researches, during the last thirty years, in zoogeography. He seeks to prove that during the Eocene period the distribution of land and water on the globe was essentially different from that at present. Extending southeast from Patagonia, so the author claims, there was at that time a bridge of land which joined South America to "Archinotis," a southern circumpolar continent which was connected with Australia by another bridge of land. Furthermore, New Guinea, in that Eocene time, was not as yet separated by water from Australia and was also connected with New Zealand by a bridge of land, in the direction still marked by scattering groups of islands. At about 30 degrees south latitude a now submerged continent, "Archhelenis," stretched from South America to Africa, which at that time extended farther east and south than at present.

Westward from Central America a continental mass reached as far as the Sandwich Islands. At about 65 degrees north latitude a bridge of land joined North America on the west and Asia and on the east with Europe through Green-

land and Iceland. There is a carefully drawn map of the reconstructed Eocene globe. Some such distribution of land and water as he outlines, it is maintained, must be assumed to account for similarities in Tertiary fauna and flora in lands so widely separated by impassable water barriers as are South America, Australia and Africa. He contests the theory of Wallace, that those similarities can be explained as produced by the action of winds, birds and marine currents. His studies lead him also to claim that Darwin's "Natural Selection" is only a subordinate factor in the origin of species. This book is indeed a valuable addition to the literature of biology and geology, as well as to that of zoogeography.

E. L. S.

Die Schiffahrt der Indianer. Von Dr. Georg Friederici, Hauptmann a. D. pp. VII, 130. Stuttgart, Verlag von Strecker & Schröder, 1907.

This monograph is No. I of a series of Studien und Forschungen zur Menschen- und Völkerkunde issued under the direction of Dr. Georg Buschan. It promises to be an interesting and useful series of ethnological studies, brief but thoroughly scientific. With the author, we are inclined to express regret that suitable illustrations were necessarily excluded on account of space. In a study of this character, illustrations, if properly selected and well printed, add greatly to the interest and the scientific value. To annotate extensively is characteristic of German thoroughness, but the author, like Carlyle in the case of his "French Revolution," has had occasion to lament the untimely loss of his manuscript for the foot-note part of his work. These notes we are promised at a later date. Notwithstanding this loss there is a carefully selected bibliographical list appended.

The monograph is confined to a consideration of the American Indians, and the author finds the field particularly rich.

Eight different types of boats are described and the places where used. That which belongs to a completely equipped boat, the sails, the oars, the rudder, etc., receives consideration appropriate to a scientific work.

The style of the author is graceful and easy. His monograph is one that cannot fail to interest even the average reader.

E. L. S.

The Zonal Belt Hypothesis. A New Explanation of the Cause of the Ice Ages. By Joseph T. Wheeler. 402 pp. J. B. Lippincott Co., Philadelphia and London, 1908.

About two-thirds of the book is concerned with myths, and consists largely of quotations from other authors. Such a work can hardly be called an important contribution to the literature concerning the causes of glacial periods. The book is advertised as a "study on the evolution of climates." It postulates a system of cloud belts which float in the upper regions of the atmosphere. The conditions which allowed them to rise to these heights were brought about by an attenuated blanket of planetesimal dust, which spread out like a canopy in still higher regions. This covering to a large extent prevented radiation from below. Water vapour, being lighter than air, "always rises until the loss of its heat causes it to condense and form into clouds." Under the conditions here described, this loss of heat would be greatly retarded, and therefore the ordinary cloud zone would be transferred to the upper or outer regions of the atmosphere.

The primary system is supposed to have been similar to the rings of Saturn, and to have been influenced by centrifugal force. As each ring approached the

earth, it would divide, spread out, and drift poleward, forming a canopy. The effect of these canopies over the temperate zones would be to bring on tropical conditions, and as the canopies advanced polewards, the warmth from the lower latitudes "was even wafted over these open places." When a canopy "aged," it became unstable at its edges, retreated towards the equator, and a colder period followed. The regions under the canopy remained cloudy and warm. Primitive man, the author believes, saw the latest cloud belts and his impressions have been mirrored in the myths of various peoples. "This fossil thought" was "gathered together to bear its share in the general testimony."

Speculations as to the causes of glacial periods are very rife nowadays, and Mr. Wheeler's book will doubtless find readers who are interested in the subject. As far as we ourselves are concerned, the theories here advanced are so highly speculative that they do not appeal to us. We prefer to be surer of the geological facts concerning ice ages, before we spend too much time trying to explain.

R. DEC. W.

En Route. A Descriptive Automobile Tour Through Nine Countries and Over Nineteen Great Passes of Europe. By Roy Trevor. xv and 304 pp., Maps, Illustrations, and Index. Edward Stanford, London, 1908. Price, 10s. 6d.

We have here an unpretending volume of pleasure travel for which the writer claims no originality and whose chief purpose is to demonstrate the delights of using the automobile in foreign journeyings. The author with his fiancée, his sister and his sister's husband constitute the party and the story, perhaps only pardonably sentimental, professes to be a truthful narrative of their sayings and goings. The journeys were made in central, southern and northern Europe.

The volume is useful, not so much for instruction or for guidance to the traveler, as a light and agreeable reminder of pleasant days to those who know the ordinary scenes of European travel. Devotees of the motor car will recognize many interesting experiences and will doubtless derive profitable hints for handling their vehicles in difficult situations or for meeting the various foreign regulations and custom house requirements. The special attraction of the book is that no description of great cities or galleries or churches is undertaken, but the story is of the road and its experiences and of the common people and rural scenes. An "epilogue" gathers up a number of specific directions and suggestions for automobile tourists in European lands. Something like a hundred full-page half tones are from photographs made by the author. These form as a rule an interesting series. The perspective is not always well handled and the Mercedes car is a good deal in evidence in the foreground of noble scenes, but here again we must allow for the professed ideals of the volume.

A. P. B.

The Ocean Carrier. A History and Analysis of the Service and a Discussion of the Rates of Ocean Transportation. By J. Russell Smith, xi and 344 pp., Maps, Illustrations, and Index. G. P. Putnam's Sons, New York, 1908.

Few themes in geography have so broad an interest as the ocean, whether seen in its physical features or as a highway for man. It is safe to say, however, that this important subject has a poor place in education and that most people have but vague notions of ocean commerce. This could not be said of one who

should study Professor Smith's volume, which is highly suited to the needs both of the geographer and the general reader. The author has given us ocean commerce as an organic whole, with clear outlines of its various parts and their articulations. The student of geography will find the largest interest in the twelve chapters of Part I, on the Service of the Ocean Carrier, while the economist will perhaps lay stress on Part II, which deals with rates.

The "Organization of Ocean Carrying" occupies the second chapter, which gives a threefold classification of line, merchant and charter carriers. Due emphasis is placed on the last, or "tramp" ships, which, "silent and unseen and unknown of men, are really the backbone of our shipping business." It is their place to carry the bulk cargo of raw material, bearing low charges and making slow time. The author describes their method of securing cargoes and of planning an advantageous series of voyages. It is shown that the coal consumed by the Kaiser Wilhelm II would carry a certain British tramp with 5,000 tons of freight for thirty days and take her from New York to Liverpool and back to New Orleans. Typical voyages are outlined, of which a triangular course on the North Atlantic may serve as a sample. The ship goes from Brazil to the United States laden with coffee, thence with American freight to Liverpool, returning with European manufactured goods to South America. It is easy to see that a series of voyages in the reverse direction would be a less profitable venture. A tramp would rather go to New York than to London, because of the better chance of securing a cargo for return. In this connection appears the ocean freighting of coal as a "by-product" of the charter or tramp traffic, and we at once see the conditions that make the United Kingdom so large an exporter of coal.

"Leading Routes of Ocean Commerce" may be singled out for brief reference. This chapter should be read by every teacher of elementary geography. Borrowing the phraseology of the railroads, we have the "North Atlantic Trunk Route," with its termini in New York Bay and the English Channel and employing one-sixth of all ocean shipping. Then comes the "Mediterranean-Asiatic Trunk Route" by Gibraltar and Suez, around Asia to Japan, with termini in New York Bay and the Channel, with numerous feeding branches, and viewed as extended at the present time to San Francisco and Puget Sound. Other routes are described, in such wise as to bring out the essential courses of world traffic. This result is emphasized also by chapters on the railroad steamship lines of the Atlantic and the Pacific. Space forbids mention of other discussions of equal worth, such as the history of line traffic and the renaissance of the merchant carrier. There are included five maps and many illustrations of ships of various types and epochs.

A. P. B.

BRIEF MENTION.

Der Stadtplan. Seine Entwicklung und Geographische Bedeutung. Von Prof. Dr. Eugen Oberhummer. 39 pp., and 21 Illustrations. Dietrich Reimer (Ernst Vohsen), Berlin, 1907. Price, M. 1.20. One of Dr. Oberhummer's specialties is the development and geographic significance of cities. His writings on this topic have much material for the anthropogeographer. This work is illustrated by early plans of cities. The author discusses them with reference to the topography, water resources, communications, and other geographical and geological considerations that have influenced the evolution of the ground plan of cities and their later development.

La Terre et la Lune. Forme Extérieure et Structure Interne. Par P. Puiseaux. 176 pp., Illustrations, 2 Maps, and Index. Gauthier-Villars, Paris, 1908. One of the "Études nouvelles sur l'Astronomie" which the firm of Gauthier-Villars is publishing. The author, who is the astronomer in charge at the Observatory of Paris, compares the earth and its satellite in relation to their exterior form and internal structure, discussing first the earth and then the moon and presenting the lunar evidence bearing upon the problem of the evolution of the planets. Among the illustrations are 24 full-page photographic reproductions of parts of the moon's surface.

Le Pays Mossi. Par Lucien Marc. viii and 187 pp., Illustrations, Map, Bibliography, and Index. Émile Larose, Paris, 1909. Price, 6 fr. The Mossi country, a part of French West Africa, south of the northern bend of the Niger, has, until recently, been little known, and only in fragmentary reports. Lieut. Marc, who has spent nearly five years at Uagadugu, the chief French post in Mossi, has combined with his own observations the information other visitors have collected and gives in this beautifully illustrated volume the first complete account of Mossi. The country has a very large and laborious population, and the author believes that in agriculture, industries and commerce it will have an important future.

Cirene e Cartagine. By Giacomo de Martino. xvi and 193 pp., Map, Illustrations, Appendix, and Index. Nicola Zanichelli, Bologna, 1908. Over half of the work is devoted to Tripoli with its ruins, telling of happier and more prosperous times, and its present antagonistic attitude towards modern progress. The second part is given to Tunis with a chapter on Carthage, and the ruins of the Roman city built after the fall of the Carthaginian power; also a survey of the work that Italian immigrants are doing in that reviving land. The illustrations are admirable and the text vividly depicts the present aspects of these regions and the opportunities that are opening for Italian enterprise.

The Province of New Jersey. 1664-1738. By Edwin P. Tanner. xvi and 712 pp., and Index. Columbia University, Longmans, Green & Co., Agents, New York, 1908. Price, \$4.00. A valuable study of the political institutions of New Jersey during the period of her executive union with New York. In addition to its historical importance the work is very interesting for the light it throws on the several stages of political development in one of England's early colonies in America.

Missouri. By J. U. Barnard. (Supplementary Volume, Tarr and McMurry Geographies.) x and 60 pp., Maps, Illustrations, and Appendix. The Macmillan Company, New York, 1908. A compact, illustrated account of the historical and economic development of Missouri, its physiographic features, public institutions, cities and towns, with statistical tables.

The Witness of the Wilderness. The Bedawin of the Desert. By the Rev. G. Robinson Lees. xii and 222 pp., 28 Illustrations, and Index. Longmans, Green, and Co., London and New York, 1909. Price, \$1.25. The book is full of minute and intimate information concerning the Bedawin or Bedouin, beyond the Jordan, where the people are still living the ancient life of their fathers. During six years in Palestine, the author saw a great deal of these nomads in their "hair tents" and studied all phases of their lives. He shows, by numerous references to the Bible, how remarkably they are still identified, in manner, and customs, with their forebears of Old Testament times. The unique feature of the book is that

the ways of life of this race are not only vividly described but are shown also in the relation they bear to the Scriptures.

Una Gita all'Harrar. By Captain E. A. d'Albertis. 128 pp., 62 Illustrations, and Map. Fratelli Treves, Milan, 1906. A description of Jibuti, the French port on Tajura Bay, of the desert railroad that connects it with Harrar, only a few years ago inaccessible to white travellers excepting at the peril of their lives, and of the city now under the rule of Emperor Menelik and strongly influenced by some impulses of modern progress. Finely illustrated.

Étude sur le Tchad et le Bassin du Chari. Par H. Freydenberg. viii and 187 pp., Illustrations, Maps, and Index. Fernand Schmidt, Paris, 1908. Price, 10 frs. A scientific study of the region of Lake Chad and a worthy contribution to the solution of its vexed problems. Dr. Freydenberg attributes the conflicting accounts of Chad, from Denham in 1822 to the present time, to the fact, which now seems assured, that the lake is subject to a climatic period of twenty years, marking its recurring transformations from a high to a very low stage of water.

The Plane Table and its use in Surveying. By W. H. Lovell. 49 pp., Illustrations, and Index. McGraw Publishing Company, New York, 1908. Discusses the form of the plane table, and the methods of using the instrument for surveying purposes. The subject is growing in interest, and Mr. Lovell's book may help to bring the plane table more into use by this demonstration of its advantages. Both our Coast and Geological Surveys have long used the plane table, but it has seldom been employed by railroad and land surveyors.

Landeskunde der Republik Brasilien. Von Bel. Rodolpho von Ihering. 167 pp., 12 Illustrations, Map, and Index. G. J. Göschen'sche Verlagshandlung, Leipzig, 1908. Price, 80 pf. The literature on Brazil is very large, but there is room for this condensed description by a native of Brazil of the geography of the Republic and its many activities. The map in colours is in the best German style.

Die Polarforschung, ihre Ziele und Ergebnisse. Von Eugen Oberhummer. 51 pp. Selbstverlag des Vereines zur Verbreitung naturwissenschaftlicher Kenntnisse, Vienna, 1908. This paper is of a nature to dispel the doubts of those who have distrusted the utility of polar exploration. Dr. Oberhummer shows that polar exploration has been justified by its geographical and other scientific results, to say nothing of the whaleries and other material resources discovered in the cold zones. He gives a concise summary of the leading exploratory enterprises in the polar regions and their results.

The Contour Road Book of Ireland. By Harry R. G. Inglis. xvi and 271 pp., Maps, Plans, and Index. Gall & Inglis, Edinburgh, 1908-9. Price, 2s. A noteworthy little book such as can be produced only in countries whose mapping is of high grade. It gives profile plans of 500 roads and the up and down curvings reproduce the rise and fall of each road from end to end. The text gives compact information about the roads. This is the last of the three handbooks covering the United Kingdom in this manner.

Die Landwirtschaft in heutigen Griechenland. Von Dr. Panajotis A. Decasos. viii and 139 pp., and Appendix. Paul Parey, Berlin, 1904. Price, M. 4. An economic study of the Greece of to-day. Part 1 (55 pp.) describes the geographical and geological bases of enterprise, with German thoroughness; also the transportation facilities, government aids to agriculture, and labour, capital, and credit conditions. The lack of capital is the greatest impediment to material progress. In part 2 (75 pp.) the distribution of tillable and pastoral lands and every phase

of industry to which they give rise are discussed. Forest industries are treated in the appendix. The book adequately fills a need that has not been fully supplied in earlier writings on modern Greece.

La Côte Nord du Saint-Laurent et le Labrador Canadien. Par Eugène Rouillard. 188 pp., Map, Illustrations, and Indexes. Laflamme & Poulx, Quebec, 1908. Describes the region on the north shore of the St. Lawrence River and Gulf, formerly thought to be almost worthless. That opinion has been greatly modified in recent years, and the book tells, what is now known, of the large timber and other resources and of the many rivers whose falls and rapids supply an enormous amount of water power, which, doubtless, will some day be utilized. The lower Manicouagan, for example, has falls whose total volume and power, it is asserted, surpass those at Niagara. The book sums up recent information which gives another aspect to a once discredited region.

Les Paysans de la Normandie Orientale. By Jules Sion. viii and 544 pp., Maps, Illustrations, Bibliography, and Index. A. Colin, Paris, 1909. Price, 12 frs. One of the authoritative geographic investigations of regions in France which Colin is publishing. Dr. Sion tells of the origin of the inhabitants of eastern Normandy; how they conquered their fields from the forests and marshes; the systems of cultivation in each district; the land proprietors, farmers, and labourers, the density, distribution, and vitality of the population. He discusses many other questions, points to their solution and describes the interrelations between the Norman peasant and his physical environment. The maps and other illustrations are very helpful.

Les Petites Antilles. By P. Chemin Dupontès. viii and 362 pp., Map, Bibliography, and Index. E. Guilmoto, Paris, 1909. Price, fr. 7.50. A scientific study of the economic conditions in the Lesser Antilles, including the islands belonging to England, Denmark, and the Netherlands, as well as those of France. The author points a moral for the consideration of his compatriots. He proves that Great Britain, through much study and sacrifice, has established the prosperity of her own little islands, with which the French islands do not favourably compare. Now that beet sugar culture has nearly ruined the cane sugar industry of the Antilles, France should study how fully to utilize the varied resources of the soil in her own possessions. The author discusses this question in relation to all the islands and his book is a careful and informing study of their economic evolution.

Die Gefahren der Alpen. Erfahrungen und Ratschläge von Emil Zsigmondy. Neubearbeitet und ergänzt von W. Paulcke. 4th Edition. xv and 348 pp., Illustrations, and Appendix. A. Edlinger's Verlag, Innsbruck, 1908. Price, M. 4. It was the irony of fate that the great Alpinist, Zsigmondy, who wrote this book on the dangers of the Alps, should have met his death while climbing in the Pelvoux group in 1885, the year the book was published. The present edition is much more than a reprint, for it has been enlarged and revised by Prof. Paulcke in the light of Alpine experience since the author's death. The book covers all phases of Alpine dangers and gives scholarly treatment to Alpine meteorological conditions and the effects of weathering upon different kinds of rock.

Die Theiss. Eine Potamologische Studie. Von Dr. Paul Vujevic. 76 pp., Illustrations and Tables. B. G. Teubner, Leipzig, 1906. Price, M. 4. Published as No. 4 in Vol. 7 of "*Geographische Abhandlungen*" edited by Prof. Albrecht Penck. It describes the basin of the Theiss, the conditions of flow-off and precipi-

tation, and the relations between them. A thorough discussion of the *régime* of the river.

Trading in Early Days. By H. Ling Roth. (No. 5 of Bankfield Museum Notes.) 45 pp., Map, and Illustrations. F. King & Sons, Halifax, England, 1908. An interesting paper on trading among primitive peoples, dealing chiefly with the inhabitants of the tropics, to which primitive methods of trade are now largely confined.

Opportunities in Canada. Edited by Ernest Heaton and J. Beverley Robinson. 247 pp., Illustrations, and Indexes. Heaton's Agency, Toronto, 1909. An abbreviated edition of "Heaton's Annual" giving a large amount of information, alphabetically arranged, and in concise and handy form. There is scarcely a waste word in it. The booklet is distributed gratuitously by the Superintendent of Immigration, Ottawa, Canada.

Cuba. Population, History and Resources, 1907. Compiled by Victor H. Olmstead and Henry Gannett. 275 pp., Illustrations. United States Bureau of the Census, Washington, 1909. Full of information on Cuba largely compiled from the Census Reports of 1899 and 1907. Well illustrated.

CURRENT GEOGRAPHICAL PAPERS.

NORTH AMERICA.

LABRADOR.—Beiträge zur Kenntniss des nordöstlichen Labradors. Ills. B. Hantsch. *Mitt. des Verein für Erdk. zu Dresden*, Nos. 8 and 9, 1909.

MEXICO.—Beyond the Mexican Sierras. Map and Ills. D. Wallace. *The Outing Mag.*, April and May, 1909.

MISSISSIPPI RIVER.—Improvements of the Upper Mississippi River. Maps and Profiles. C. McD. Townsend. *Jour. Western Soc. of Engineers*, Feb., 1909.

NEW JERSEY.—Recent Additions to Our Knowledge of the Flora of Southern New Jersey. Witmer Stone. *Proc. Acad. Nat. Sci.* of Philadelphia, Part III, 1908.

NORTH AMERICA. Geology.—Bibliography of North American Geology for 1906 and 1907. Subject Index. *Bull.* 372, U. S. Geol. Sur., 1909.

NORTH AMERICA. Rivers.—Variations in the run-off in some of the North American Rivers for many Years. [In Russian.] E. V. Oppokov. *Mem. of the Imperial Acad. of Sci.* of St. Petersburg, No. 6, Vol. XXII, 1908.

UNITED STATES. Conservation Work.—Current Progress in Conservation Work. W J McGee. *Science*, March 26, 1909.

UNITED STATES.—The Forestry Problem in the United States. Jean Dawson. *Jour. of Geog.*, Nov. 6, 1909, New York.

CENTRAL AND SOUTH AMERICA.

BRAZIL.—Ergebnisse der botanischen Expedition der Kaiserlichen Akademie der Wissenschaften nach Südbrasilien, 1901. Band 1. Ills. Edited by R. v. Wettstein and V. Schiffner. *Denkschriften der K. Akad. der Wissensch.* Wien, 1 Halbband, 1908.

AFRICA.

ABYSSINIA.—Impressions de Voyage en Abyssinie. Ills. M. J. Barois. *Bull. de l'Institut Égyptien*, Tome II, 1908.

ABYSSINIA.—A Meteorological Expedition to Addis Abeba in 1907. J. I. Craig. (Reprint from the *Cairo Scientific Journal*, No. 27, 1908.)

BELGIAN CONGO.—Une Contrée d'avenir dans le Centre Africain: le Katanga et les moyens d'y accéder. *A Travers le Monde*, No. 11, 1909.

CAMEROONS.—Von Joko nach Ngaumdere. Eine Reise in Adamaua. Dr. E. Diesing. *Globus*, No. 9, 1909.

FRENCH SOMALILAND.—Di un Recente Rapporto Ufficiale sulla Costa Francese dei Somali. C. Conti Rossini. *L'Esplorazi. Commec.*, Milan, March, 1909.

FRENCH WEST AFRICA. Railroads.—Construction and Working of Railways in French West Africa. Maj. J. G. Baldwin. *The Board of Trade Jour.*, March 25, 1909.

GERMAN EAST AFRICA.—Die Buren in Deutsch-Ostafrika. Prof. P. Samassa. *Kolonial. Zeits.*, No. 5, 1909.

EGYPT.—Mortalité humaine et animale par le froid en Égypte. M. J.-B. Piot Bey. *Bull. de l'Institut Égyptien*, Tome II, 1908.

EGYPT.—Sur des Vertébrés de l'Éocène d'Égypte. M. F. Priem. *Bull. de l'Institut Égyptien*, Tome II, 1908.

ERITREA.—Contributo allo studio geografico della Colonia Eritrea. Map and Profiles. Capt. Pietro Verri. *Boll. della Soc. Geog. Italiana*, No. 3, 1909.

GERMAN EAST AFRICA.—Der Reis in Deutsch-Ostafrika. Dr. K. Braun-Amani. *Deutsch-Ostafrik. Zeit.*, No. 16, 1909.

TOGO.—Togo im Jahre 1908. Fr. Hupfeld. *Deutsche Kolonialzeit.* No. 11, 1909.

ASIA.

ANNAM-TONKIN.—Le Protectorat de la France en Annam et au Tonkin. Ch. Fournier-Wailly. *Bull. Com. de l'Asie Franç.*, Feb., 1909.

DUTCH EAST INDIES.—Tochten op het Eiland Boeroe. (7 Febr.-16 Juli, 1908.) Map. J. H. W. van der Miesen. *Tijds. van het K. Nederl. Aardrijks. Genoots.*, No. 2, 1909.

DUTCH EAST INDIES.—*De Mentawai-Eilanden*. Map. J. B. Neumann. *Tijdsch. van het K. Nederlandsch Aardrijks. Genoots.*, No. 2, 1909.

INDIA.—Indian Industrial Development. F. J. E. Spring. *The Imper. and Asiatic Quarterly Rev.*, April, 1909.

INDIA.—Andaman Islands. A Collection from the Andaman Islands. Ills. C. W. Mead. *The Amer. Museum Jour.*, April, 1909.

SIBERIA.—Der Baikalsee. W. Halbfass. *Globus*, No. 9, 1909.

AUSTRALASIA AND OCEANIA.

NEW GUINEA.—Verrichtingen van het Militaire Exploratie-Detachement op Zuid Nieuw-Guinea. *Tijdsch. van het K. Nederl. Aardrijks. Genoots.*, No. 2, 1909.

NEW ZEALAND.—History and Traditions of the Taranaki Coast. Maps and Illustrations. *Jour. Polynesian Soc.*, Nos. 3, 4, 1907, and 1, 2, 3, 4, 1908.

POLYNESIA.—Easter Island. *Scott. Geog. Mag.*, April, 1909.

POLYNESIA.—Ozean Insel. K. Klette. *Mitt. der k. k. Geog. Gesells.* in Wien, Nos. 11 and 12, 1908.

WESTERN AUSTRALIA.—The Bonnievale and Kunanalling Districts, Coolgardie Goldfield. The Black Range District, East Murchison Goldfield. Maps, Plates and Figures. C. G. Gibson. *Bull.* No. 31, Geol. Sur., Western Australia, Perth, 1908.

WESTERN AUSTRALIA.—Report from the Auriferous Deposits of Barrambie and Errolls, etc. Maps, Plates, and Photographs. C. G. Gibson. *Bull. No. 34 Geol. Survey, Western Australia*, 1908.

WESTERN AUSTRALIA.—Seventh Census of Western Australia, Taken for the Night of 31st March, 1901. Maps and Tables. Compiled under the direction of Malcolm A. C. Fraser. Perth, 3 Vols., 1903, and 1904.

EUROPE.

ALPS, THE.—Mont Blanc. Le Chemin de Fer du Mont Blanc. *Le Mouve. Geog.*, No. 11, 1909.

AUSTRIA-HUNGARY.—Die Tropfsteinhöhle von Slivno bei Nabresina (Triester Karst). Map. G. A. Perko. *Mitt. der k. k. Geog. Gesells. in Wien*, Nos. 11 and 12, 1908.

AUSTRIA-HUNGARY.—Die Entwicklung der Erdkunde in Österreich seit der Mitte des 19. Jahrhunderts. Prof. Dr. E. Oberhummer. *Mitt. der k. k. Geog. Gesells. in Wien*, Nos. 11 and 12, 1908.

AUSTRIA-TURKEY.—Historical. Der Österreichisch-Türkische Staatsvertrag vom 26 Februar, 1909. *Österreich. Monatsschrift für den Orient*, March, 1909.

BULGARIA.—La Population de la Bulgarie par années. [1888-1908.] *Bull. Mensuel de la Direction Gén. de Stat. du Royaume de Bulgarie*, No. 4, 1909 (in Bulgarian and French).

CROATIA.—Ein Ausflug zu den Plitvicer Seen in Kroatien. Ills. G. W. Gessmann. *Mitt. der k. k. Geog. Gesells. in Wien*, Nos. 11 and 12, 1908.

DENMARK.—The Faroes. Reisebilder von den Färöern. H. Erkes. *Deutsche Geog. Blätter*, Nos. 1 and 2, 1909.

DENMARK. Iceland.—Ueberblick über die Ergebnisse der v. Knebelschen Island expedition vom Jahre 1907. Ills. and Tables. Hans Spethmann. *Gaea*, Nos. 1 and 2, 1909.

GERMANY. Rhine basin.—Untersuchung der Hochwasserverhältnisse im deutschen Rheingebiet. H. Keller. *Geog. Zeitsch.*, No. 3, 1909.

ITALY.—Navigation. Per la Navigazione Interna. Prof. A. Michieli. *L'Esploraz. Commerc.*, No. 3, 1909.

NETHERLANDS, THE.—Holland und das Reich vor der Burgunderzeit. P. J. Blok. *Nachrichten von der K. Gesells. der Wissensch. zu Göttingen*, Heft 6, 1908.

NETHERLANDS, THE.—Ontginning van Woeste Gronden in Nederland. J. van Baren. *Tijdsch. van het K. Nederl. Aardrijks. Genoots.*, No. 2, 1909.

NORWAY.—Die norwegisch deutsche Salpeter-industrie in Norwegen. *Export*, No. 11, 1909.

RUSSIA.—L'Oural au point de vue minier et métallurgique. A. Offret. *Bull. Soc. de Géog. de Lyon*, 2e Série, Tome 1, 1908.

RUSSIA.—Russlands Zuckerindustrie und ihre Bedeutung für Deutschland. *Export*, No. 11, 1909.

SERVIA.—Les Aspirations Serbes. Map. G. Demanche. *Rev. Franç. de l'Étranger et des Col.*, March, 1909.

SWITZERLAND-AUSTRIA. Inn River.—Über die Entstehung der Innthal-Terrassen. Profles. Dr. O. Ampferer. *Zeitsch. für Gletscherkunde*, Oct., 1908.

TURKEY.—Projected Public Works in Turkey. A. T. Waugh. *Board of Trade Jour.*, March 18, 1909.

POLAR REGIONS.

ANTARCTIC.—Der heutige Stand der Geographie der Antarktis. L. Mecking. *Geog. Zeitsch.*, No. 3, 1909.

PHYSICAL GEOGRAPHY.

CLIMATOLOGY.—The Seasons and their Definition. L. C. W. Bonacina. *Symons's Meteor. Mag.*, March, 1909.

CLIMATOLOGY.—Upper Air Temperatures for July, August and September. W. R. Blair. *Bull. of the Mount Weather Obser.*, Vol. 2, Part 1, 1909.

CLIMATOLOGY.—Vertical Temperature gradients of the Atmosphere in the region of the upper inversion. W. J. Humphreys. *Bull. of the Mount Weather Obser.*, Part 1, Vol. 2, 1909.

GEOPHYSICS.—The Yielding of the Earth to Disturbing Forces. A. E. H. Love. *Proc. of the Royal Soc.*, Series A., Vol. 82, No. A 551, 1909.

GLACIOLOGY. Alaska.—Some Phenomena of the Glacier Margins in the Yakutat Bay Region, Alaska. Map and Ills. Ralph S. Tarr. *Zeitsch. für Gletscherkunde*, Dec., 1908.

GLACIOLOGY. Iceland.—Der Nordrand des isländischen Inlandeises Vatnajökull. Ills. and Profile. H. Spethmann. *Zeitsch. für Gletscherkunde*, Oct., 1908.

METEOROLOGY.—Auroral Displays and Magnetic Disturbances at Mount Weather during September, 1908. W. R. Gregg. *Bull. of the Mount Weather Obser.*, Part 1, Vol. 2.

METEOROLOGY.—Diego de Revillas e le Prime Osservazioni Meteorologiche a Roma. Map. Prof. Ignazio Galli. *Osservat. Fisico-Meteorol. Municip. di Velletri*, No. 12, 1907.

OCEANOGRAPHY.—Ueber Farbe und Durchsichtigkeit des Ostseewassers. J. Gehrke. *Publications de Circonstance*, No. 45, 1909. Conseil Permanent Intern. pour l'Explor. de la Mer.

OCEANOGRAPHY.—Die Zusammendrückbarkeit des Meerwassers nebst einigen Werten für Wasser und Quecksilber. Ills. V. W. Ekman. *Pub. de Circonstance* No. 43, 1908. Conseil Permanent Intern. pour l'Exploration de la Mer.

SEISMOLOGY.—Ueber eine mögliche Ursache der Erdbeben. Dr. H. Rudolph. *Gaea*, No. 2, 1909.

SOILS.—Importance de l'Étude physique des Sols. R. Roche. *Bull. de l'Institut Égyptien*, Tome II, 1908.

TERRESTRIAL MAGNETISM.—Results of Observations made at the Coast and Geodetic Survey Magnetic Observatory at Cheltenham, Maryland, 1901-1904. Map, Profiles and Ills. Daniel L. Hazard. *Coast and Geodetic Surv., Dep. of Commerce and Labor*, 1909.

TERRESTRIAL MAGNETISM.—Aard-Magnetisme. *Jaarboek Negen-en Vijftigste Jaargang*, 1907. K. Nederl. Meteor. Institut, No. 98, 1908.

MISCELLANEOUS.

EDUCATIONAL.—Die besondere Aufgabe des geographischen Lehrbuches neben dem Atlas und den Anschauungsmitteln. B. Bruhns. *Geog. Zeitsch.*, No. 3, 1909.

EDUCATIONAL.—Géography for Secondary Schools. *Jour. of Geog.*, No. 6, 1909, New York.

MOUNTAINEERING.—Five Years with Recruits. [Fitting Novices for Mountaineering.] Ills. *The Alpine Jour.*, Feb., 1909.

NEW MAPS.

NORTH AMERICA.

U. S. GEOLOGICAL SURVEY MAPS.

MAINE.—Map of Maine showing localities, tested for peat. Scale, 16 miles to an inch. *Bull.* 376, "Peat Deposits of Maine." Red dots show where peat is present in important amounts.

HYDROGRAPHIC OFFICE CHARTS.

Pilot Chart of the North Pacific Ocean, May, 1909. On the reverse is a chart of "Tracks of Cables at Shanghai and in the Approaches to the Yangtze River," to assist vessels in their endeavours to avoid fouling the cables. There are 7 of these cables.

DEPARTMENT OF AGRICULTURE MAPS.

SOIL SURVEYS.—Easton Area, Maryland; Johnstown Area, Pennsylvania; Distribution of soils shown by tints; soil profiles on margin; descriptive letterpress.

INTERNATIONAL UNION OF THE AMER. REPUBLICS.

AMERICA.—Map illustrating article "Wireless Telegraphy in the American Republics." No scale. *Bull. Amer. Reps.*, Washington, April, 1909. Red symbols show distribution of government and commercial stations.

SOUTH AND CENTRAL AMERICA.

BOLIVIA.—Mapa General de la Republica de Bolivia. Scale, 1:2,500,000=39.4 miles to an inch. Luis Garcia Meza. Kartographia Winterthur A.-G., Winterthur, 1908. London Agent, Edward Stanford. Price, 12s. This map, in colours, is the most complete yet made of Bolivia. Parts of it are the results of Mr. Meza's own surveys and explorations. The distribution of metals and other economic and cultural features is indicated; also the limits of river navigation. An index facilitates the finding of place names.

AFRICA.

ABYSSINIA.—Schizzo Dimostrativo delle Principali Conessioni per Ricerche Minerarie accordate dall' Imperatore Menelik II in Etiopia. Scale, 1:5,000,000=78.9 miles to an inch. By Carlo Rossetti. Istit. Geogr. Dott. G. de Agostini & C., Novara, North Italy. Emperor Menelik II has given 8 mining concessions to Italian or other companies. The map shows, in colours, the territorial extent of these concessions.

EASTERN AFRICA.—Schizzo Dimostrativo della situazione politica nell' Africa Orientale. Scale, 1:5,000,000=78.9 miles to an inch. By Carlo Rossetti. 2nd Edition, July, 1907. Istit. Geogr. Dott. G. de Agostini & C., Novara, North Italy. A most informing map showing, in colours, railroads, telegraph and caravan routes from Eritrea to Uganda, and the political subdivisions of Abyssinia which have rarely been seen on recent maps.

CAPE OF GOOD HOPE.—Geological Map of the Colony of the Cape of Good Hope. Scale, 1:238,000=3.7 miles to an inch. Sheets, 33 (Britstown), geology by A. L. Du Toit; 41 (Griqua Town), geology by A. W. Rogers and A. L. Du

Toit. Geological Commission, Cape Town, 1908 and 1909. Coloured, with geological sections on margins in which the vertical scale is 5 times the horizontal scale.

ERITREA.—Le Zone Climatiche della Colonia Eritrea. Scale, 1:3,500,000=55.2 miles to an inch. *Rivista Geog. Ital.*, Florence, April, 1909. Illustrates an article by G. Dainelli and O. Marinelli. Black symbols to show climatic zones.

EUROPE.

AUSTRIA.—Touristenkarte von Tirol. Scale, 1:500,000=7.8 miles to an inch. R. Leuzinger. Kümmerley & Frey and A. Francke, Bern, 1909. Price, M. a paper; M. 3.50 cloth. Relief effect given by light and shade. One of the superior tourist maps of this firm.

BAVARIA.—Relief-Karte vom Bayerischen Hochland. 3 Sheets. No scale. By Prof. M. Zeno Diemer. Edited by the Verein zur Förderung des Fremdenverkehrs in München und im Bayerischen Hochland. Carl Gerber, Munich, 1909. Price, M. 1.25. A lithographic picture map strikingly depicting the relief forms, hydrography, roads, and towns. Intended for tourists.

CENTRAL EUROPE.—Bartholomew's Contour Motoring Map of ———. Scale, 1:2,000,000=31.5 miles to an inch. Edinburgh Geographical Institute, Edinburgh, 1909. Price, 5s. net. Shows in red the best touring routes, with heights and distances in meters and kilometers. Colours represent contours of altitude. Insets of Paris, Hamburg, Berlin, Rome, Vienna and their environs, and routes between Nice and Monaco.

GERMANY.—Sprachenkarte von Deutsch-Lothringen. Scale, 1:200,000=3.1 miles to an inch. By Paul Langhans. *Deutsche Erde*, Vol. 8, No. 2, Gotha, 1909. 14 coloured symbols to show distribution of German, French, or other mother languages. Based upon the Census of 1905. Illustrates an article by Dr. H. Witte.

HUNGARY.—Niederschlagskarte des Theissgebietes 1891-1900. Scale, 1:2,000,000=31.56 miles to an inch. By P. Vujevic. Illustrates "Die Theiss" by Dr. Paul Vujevic. Teubner, Leipzig, 1906. Black and white map of the river basin shaded to show the differing amounts of precipitation.

NORWAY.—Topografisk Kart over Kongeriget Norge: K. 8. Öksnes; 25 B. Gjøvik. Scale (both sheets), 1:100,000=1.5 miles to an inch. Price, Kr. 0.60 a sheet; Nordre Trondhjems Amt III. Scale, 1:200,000=3.1 miles to an inch. Price, Kr. 1. Utgit av Norges geografiske Opmaaling, 1908. The first two sheets are additions to the Topographic Map of the Kingdom whose effective representation of relief features by contours and brown shading has been noted in the *Bulletin*. The third sheet is a black, contoured map.

PORTUGAL.—Carta Hypsometrica de Portugal. Scale, 1:500,000=7.89 miles to an inch. 2 sheets. Comissão do Serviço Geologico, Lisbon, 1906. A beautiful map showing the topographic relief of Portugal reduced from the topographic survey sheets on a scale of 1:100,000. Two shades of blue are used for coastal sea depths, 2 of green for land elevations from sea level to 50 meters and 6 of brown for elevations from 50 to over 1,400 meters. This effective map has a large nomenclature and is accompanied by an explanatory pamphlet of 71 pp., giving the history of the official mapping of the Kingdom, a concise treatment of

its geological and physiographic features and a geologic and tectonic map of Portugal on a scale of 1:2,500,000.

SWEDEN.—Sveriges Järnvägar vid Slutet af År 1907. Scale, 1:2,000,000=31.56 miles to an inch. Bidrag Till Sveriges Officiella Statistik, L) Statens Järnvägsstrafik 46. a. Stockholm, 1909. Railroads coloured to show track gauges, etc.

UNITED KINGDOM.—Plan of Birmingham. Scale, one-fifth mile to an inch. J. Bartholomew. Edinburgh Geographical Institute, Edinburgh, 1909. Price, 1s. paper; 2s. cloth. In colours. Index to streets and other places. Every name legible.

UNITED KINGDOM.—Bartholomew's Contoured Road Map of Scotland. Scale, 1:633,600=10 miles to an inch. Edinburgh Geographical Institute, Edinburgh, 1909. Price, 1s. net. Contours finely brought out in colours. Roads differentiated according to importance. Railroads and steamer routes. An unsurpassed map for driving and cycling.

ATLASES.

THE EDINBURGH SCHOOL ATLAS.—32 Plates in colours. W. and A. K. Johnston, Edinburgh and London, 1909. An elementary atlas on new plates with only the most important geographical names but including a list of 6,000 places whose latitude and longitude are given. Shades of brown and green show respectively land heights and sea depths.

OTHER ACCESSIONS.

ATKINS, T. DE COURCY.—The Kelt or Gael. His Ethnography, Geography and Philology. London, T. Fisher Unwin. 8vo. 1892.

BARBER, JOHN WARNER.—Massachusetts Historical Collections, being a General Collection of... facts, traditions, etc., relating to the History and Antiquities of every town in Massachusetts, etc. [Map], etc. Worcester, Dorr, Howland & Co. 8vo. 1839.

BEAUFORT, DANIEL AUGUSTUS.—Memoir of a Map of Ireland; illustrating the Topography of the Kingdom, and containing a Short Account of its Present State, etc. [Sketch-Map.] London, W. Faden, et al. 4to. 1792.

BIOGRAPHICAL SKETCHES of the Bailey-Myers-Mason Families 1776 to 1905. Key to a Cabinet of Heirlooms in the National Museum, Washington. (Illustrations.) (Washington.) Privately Printed, 1908.

CRAM, JACOB.—Journal of a Missionary Tour in 1808 through the new settlements of Northern New Hampshire and Vermont. *From the original Manuscript of Rev. —, A.M., Rochester, New York (G. P. Humphrey). (Rochester Reprints, XI.)* 8vo. 1909.

FARNHAM, ELIZA W.—California, In-doors and Out; or, How we Farm, Mine, and Live generally in the Golden State. New York, Dix, Edwards & Co. 12mo. 1856.

FOLK-LORE SOCIETY.—County Folk-Lore. Vol. V. Printed Extracts No. VII. Examples of Printed Folk-Lore concerning Lincolnshire. Collected by Mrs. Gutch and Mabel Peacock. *Publication of the Folk-Lore Society [LXIII.]* London, 1903. 8vo.

FREEMAN, EDWARD A.—The Story of Sicily. Phœnician, Greek, and Roman. *The Story of the Nations.* (Maps, etc.) New York, G. P. Putnam's Sons. 8vo, 1892.

GALLATIN, ALBERT.—The Oregon Question. New York, Bartlett & Welford. pr. 8vo. 1846.

GALLI, IGNAZIO.—Sulla duplicazione e deformazione dell' immagine solare e sui recenti crepuscoli colorati. [Illustrated.] *Estratto dagli Atti della Romana dei Nuovi Lincei. Anno LXI. Sessione IIa del 19 Gennaio 1908.* pr. 8vo. [Gift.]

HUTTON, JAMES.—Central Asia: from the Aryan to the Cossack. London, Tinsley Bros. 8vo. 1875.

INDIA.—The Imperial Gazetteer of, Vols. XXV and XXVI, Atlas and Index. Oxford, The Clarendon Press. 8vo. 1909.

INDIANS, SENECA.—Documents and Official Reports Illustrating the causes which led to the Revolution in the Government of the Seneca Indians, in the year 1848, etc. Baltimore. Printed by Wm. Wooddy & Son. pr 8vo. 1857.

LOWERY, WOODBURY.—The Spanish Settlements Within the Present Limits of the United States.—Florida—1562-1574. Maps (etc.). New York, G. P. Putnam's Sons. 1905.

OFFICIAL RECORDS of the Union and Confederate Navies in the War of the Rebellion. Published under the direction of the Hon. V. H. Metcalf, by Chas. W. Stewart. Series I—Vol. 22. Washington, 1908. (Map, etc.) 8vo. [Gift.]

SCHAEFFER, L. M.—Sketches of Travels in South America, Mexico and California. New York. James Egbert, Printer. 12mo. 1860.

SINDING, PAUL C.—The Scandinavian Races. The Northmen; the Sea-Kings and Vikings. Their Manners and Customs, Discoveries, Maritime Expeditions, Struggles, and Wars, up to the present time. [Frontispiece.] New York. Published by the Author. 8vo. 1875.

(STEELE, OLIVER G.)—Steele's Western Guide Book, and Emigrant's Directory; containing different routes through the States of New York, Ohio, Indiana, etc. 14th Edition. [2 Maps.] Buffalo. 12mo. 1846.

UNITED STATES, Merchant Vessels of the. 26th Annual List of, with the official numbers and signal letters awarded them by the Commissioner of Navigation, etc., for the Year ended June 30, 1894. [Illustrated.] Washington, Gov't. Printing Office. 8vo. 1894. [Gift.]

YOUNG, EGERTON RYERSON.—By Canoe and Dog-Train among the Cree and Salteaux Indians. [Illustrations.] New York, Hunt & Eaton. 8vo. 1890.

MAPS.

ARROWSMITH AND LEWIS.—A new and Elegant General Atlas, comprising all the new discoveries, to the present time; containing sixty-five maps, drawn by——. Published by John Conrad & Co. Philadelphia. 4to. 1904.

GEOLOGICAL SURVEY OF SWEDEN.—Ser. Bb. N:o 3. Beskrifning till Karta öfver Berggrunden . . . åren 1872-1882. I. Allmän Geologisk Beskrifning, etc. af Henrik Santesson. Ser. Bb. N:o 4. Beskrifning till Karta öfver Berggrunden, etc. II. Geognostiska Kartor och Beskrifningar öfver de Vigtigare Grufvefalten af Birger Santesson. Ser. C. N:o 65 h. i. Beskrifning öfver Skånes Stenkolsfält och Grufvor . . . af Edvard Erdmann. Geognostisk Beskrifning öfver Persbergets Grufvefält af A. E. Törnebohm. Stockholm, 1875-1889. 4 vols. 4to. [Maps, etc.]

RUSSELL, J.—(Title-page wanting.) [Atlas, containing nine maps:—N. America; S. America; United States; etc. London, H. D. Symonds, 1794.] Folio.

THE FALE'ULA LIBRARY.

The theoretical locus of perfection in libraries is a collection of all books so centrally situated, so scientifically indexed and crossed that any student of any subject may find ready to his hand and to such intelligence as may have been acquired by him the last statement of results reached along the lines of the inquiry which he is prosecuting. It must be confessed that this conception of the perfect library is so Alexandrine that it would tempt the pasha of the nearest horde of barbarians to sweep down and commit it to the flames. In default of this perfection so impossible of attainment the best results are obtained through the formation of special collections of books under the care of societies of students pursuing cognate lines of research. Here, again, the society library finds its underlying basis in the private library of the special student who devotes his time and thought to some particular theme of the pursuit general to his fellows in membership. The record of such special book collections cannot be held out of place in the published transactions of any society, for such collections naturally gravitate in the end to society keeping after they have served their individual purpose; even before such an event there is benefit in scanning the lists of the works which have been found valuable to the special student, and at times it is very convenient to know in whose possession one may find certain rare, sometimes unique, works which are needed to complete one's line of study.

The following memorandum forms an effective system of reference to the working library of a lifelong student of Polynesia and, therefore, may properly be counted on to afford assistance, within its limitations, to others who may wish to engage upon the study of this by no means the least interesting of the major geographical provinces. There lies all the more reason for giving publicity to these notes in the fact that a Polynesian bibliography yet remains sadly to seek.

The valuable library of the Polynesian Society remains at its New Zealand home with no conspectus to reveal just what its treasures are save as one may laboriously find somewhat out by examining the list of accessions in the published journal. The Hawaiian Historical Society, which also, though with a much less amount of publication to its credit, essays to cover the same field, issued in 1897 a finding list of the books in the society's library in a pamphlet of twenty-nine pages; lacking in library method this catalogue scarcely

breaks the ground of what might be made an exhaustive and valuable addition to the Polynesian research armamentarium. The Library of Congress has issued bibliographies of parts of this Pacific region as more fully noted below, those of Hawaii, of Samoa and of Guam.

The scope of the Fale'ula library is conditioned by the objects which it was designed to subserve. First and foremost my studies have been directed to the philology of the Polynesian languages and with particular incidence upon those languages of the central tract of the South Pacific to which I have elsewhere assigned the designation of Nuclear Polynesia. Vocabularies and texts, therefore, have held the first place in my collecting zeal, then such ethnological works as by recording manners and customs might throw a light upon the speech, last of all the works of pure geography. The result as herein shown will be discovered to be a partial bibliography of the subject, yet one which may be found a satisfactory framework on which to advance that Polynesian bibliography which becomes more and more needed.

The name Fale'ula is well worth a brief comment. I have employed it in designation of this library of the South Seas not merely because its use as a house name was given to me with ritual formality by the Samoan rulers who have the name in their keeping. It has a far more intimate applicability. In New Zealand, where the Maori race has attained the highest development reached by any of the Polynesian peoples, the *wharekura* is defined briefly as a kind of college or school in which anciently the sons of priest-chiefs (*ariki*) were taught mythology, history, agriculture, astronomy and other requisites of the perfect life, all under conditions of the strictest *tapu* in a course extending over five years. In Samoa, where the conditions of life are simpler and represent an earlier stage of Polynesian society, the Fale'ula is the house of the sacred Tui-Manu'a in the town of Fitiuta on the island of Ta'u. In the ritual of honorific courtesy it is thus saluted:

Tuolu ia na le Fale'ula tau aitu.

Saving the grace of the House of Gladness where the gods dwell.

Nor is this phrase the only inscription to Fale'ula of the divine power to work wonders, the Samoan lyric poetry is filled with stories of the power and the inspiration which flows out of this abode of the gods.

WILLIAM CHURCHILL.

Fale'ula,
1874 East Twelfth street
Brooklyn, N. Y. January 1, 1909.

Books and papers in this List which are in library of the
American Geographical Society are marked *

GENERAL.

Alexander, Rev. James McKinney. The islands of the Pacific. From the old to the new. A compendious sketch of missions in the Pacific. *New York: American Tract Society (1895). 515 pp., plates (photographs).*

Andree, Dr. R. Ethnographische Parallelen und Vergleiche. *Stuttgart: J. Maier, 1878.*

Angas, J. F. Polynesia. *London: Society for the Promotion of Christian Knowledge.*

Bastian, A. Einiges aus Samoa und andern Inseln der Südsee. Mit ethnographischen Anmerkungen zur Colonialgeschichte. *Berlin: Ferd. Dümmler, 1889. pp. iv, 107. (Polynesian Papers iv.)*

* **Blackman, Leopold G.** The Pacific: the most explored and least known region of the globe. *National Geographic Magazine, xix, 546-563, 12 illustrations.*

Brandstetter, Prof. Dr. Renward. Eine Prodromus zu einem vergleichenden Wörterbuch der malaio-polynesischen Sprachen für Sprachforscher und Ethnographen. *Luzern: E. Haag, 1906, pp. 74.*

Brenchley, J. L. Cruise of the Curaçoa. *London: Longmans, 1873.*

Churchill, William. The Polynesian vessel. *Forest and Stream, March 11, 1899.*

* ——— Weather words of Polynesia. *Memoirs of the American Anthropological Association, 2, 1, 1907.*

* **Churchward, W. B.** Blackbirding in the South Pacific; or, The First White Man on the Beach. *London: Swan, Sonnenschein and Co., 1888, pp. 255. 8 plates.*

* **Cook, James.** A Voyage to the Pacific Ocean, undertaken by Command of His Majesty for Making Discoveries in the Northern Hemisphere, Performed under the Direction of Captains Cook, Clerke and Gore in the Years, 1776, 1777, 1778, 1779, 1780. Being a Copious, Comprehensive, and Satisfactory Abridgement of the Voyage Written by Captain James Cook, F.R.S., and Captain James King, LL.D. and F.R.S. 4 Volumes. *London: Champante and Whitrow, 1793. Vol. 1, pp. xii, 370, 1 chart, 18 plates; Vol. 2, pp. xii, 359, 11 plates; Vol. 3, pp. xii, 400, 17 plates; Vol. 4, pp. xii, 310 (37).*

* **Cox, James C.** Polynesian stone axes. *Linnean Society of New South Wales, i, 21. (Polynesian Papers v, 119.)*

* **Crawford, John.** On the Malayan and Polynesian languages and races. *Journal of the Ethnological Society, London, i, 330. (Polynesian Papers, v, 131.)*

* **Edwards, B. B.** The Missionary Gazetteer, Comprising a Geographical and Statistical Account of the Various Stations of the American and Foreign Protestant Missionary Societies of all Denominations, with their Progress in Evangelization and Civilization. *Boston: Published by William Hyde and Co., 1832, pp. xi, 431, 24 plates.*

* **Ellis, Rev. William.** Polynesian Researches during a residence of nearly eight years in the Society and Sandwich Islands. A new edition, enlarged and improved. *London: Henry G. Bohn, 1853: Vol. 1, pp. xvi, 414, map, 2 plates, 16 cuts; Vol. 2, pp. viii, 438, map, 3 plates, 2 cuts; Vol. 3, pp. viii, 407, 2 plates, 1 cut; Vol. 4, pp. viii, 496, 1 map, 2 plates.*

* **Fraser, John.** The Malayo-Polynesian Theory. *Extract Journal of the Polynesian Society, pp. 24.*

Hartwig, Dr. Georg. Die Inseln des grossen Oceans in Natur- und Völkerleben. *Wiesbaden: C. W. Kreidel, 1861, pp. xvi, 544.*

* **Krämer, Dr. Augustin.** Hawaii, Ostmikronesien und Samoa: Meine zweite Südseereise (1897-1899) zum Studium der Atolle und ihrer Bewohner. *Stuttgart: Strecker und Schröder, 1906, pp. xv, 585.*

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans: Eine geographische Monographie. Zweiter Theil: Polynesien und Mikronesien. *Leipzig: Paul Froberg, 1876, pp. 487.*

* **Melville, Herman.** Mardi: and a Voyage Thither. *New York: Harper and Bros., 1849, vol. 1, pp. xii, 365; vol. 2, pp. xii, 387.*

Müller, Dr. Friedrich. Reise der österreichischen Fregatte Novara um die Erde in den Jahre 1857, 1858, 1859 unter den Befehlen des Commodore B. von Wüllerstorff-Urbair: Linguistischer Theil. *Wien: Kaiserliche Akademie der Wissenschaften, 1867.* (iv Abtheilung: Malayo-Polynesische Sprachen, pp. 267-357.)

* **Murray, Rev. A. W.** The Martyrs of Polynesia: Memorials of Missionaries, Native Evangelists, and Native Converts, Who have Died by the Hand of Violence from 1790 to 1871. *London: Elliot Stock, 1885, xv, 223, 1 map, 11 illustrations.*

Peal, S. E. The Malayo-Polynesian Theory: Comments on Dr. Fraser's Paper. *Extract Journal of the Polynesian Society, pp. 7.*

Pembroke, George Robert, Charles Herbert, 13th Earl of; and **George Henry Kingsley.** South Sea Bubbles, by the Earl and the Doctor. *New York: D. Appleton and Co., 1872, pp. 312.*

* **Perkins, Edward T.** Na Motu: or, Reef-Rovings in the South Seas: a Narrative of Adventures at the Hawaiian, Georgian and Society Islands, with an Appendix relating to the resources, social and political condition of Polynesia and subjects of interest in the Pacific Ocean. *New York: Putney and Russell, 1854, pp. xvi, 456, 2 maps, 12 illustrations.*

* **Polynesian Society.** The Journal of the Polynesian Society, containing the transactions and proceedings of the Society. Published quarterly in annual volumes. Nos. 19, 21, 22, 23, 25, 32, 33, 35, Vol. x (1901)—current.

* **Pritchard, W. T.** Polynesian Reminiscences, or Life in the South Sea Islands; preface by Dr. Seemann. *London: Chapman and Hall, 1866, pp. xii, 428, 4 plates.*

* **Quatrefages, A. de.** Les Polynésien et Leurs Migrations. *Paris: Arthus Bertrand, n. d., pp. 200, 4 charts.*

—— Les Polynésien et Leurs Migrations. *Paris: Comptes-rendus, Académie des Sciences, lxxiii, 815.* (Polynesian papers v. 128.)

Ray, Sidney H. The Common Origin of the Oceanic Languages. *Extract Journal of the Polynesian Society, pp. 11.*

Rietmann, O. Wanderungen in Australien und Polynesien. *St. Gallen: Scheitlin und Z, 1868.*

* **Russell, Right Rev. M.** Polynesia: a History of the South Sea Islands, including New Zealand, with Narrative of the Introduction of Christianity. *London: T. Nelson & Sons, 1853, pp. 486, 1 map, 2 plates.*

Smith, S. Percy. Hawaiki: The Whence of the Maori: being an introduction to the native history of Rarotonga. *Wellington: Whitcombe and Tombs, 1898, pp. 128.* (Polynesian Papers I.)

—— Hawaiki: The original home of the Maori, with a sketch of Polynesian history. Second edition, enlarged and mostly rewritten. *Wellington: Whitcombe and Tombs, 1904, pp. 223.*

—— Synopsis of a lecture on the origin and migrations of the Polynesians. Fifth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

* **Spry, W. W. J.** Cruise of the Challenger. *London: S. Low and Co., 1876.*

* **Taylor, Rev. Fitch W.** A Voyage Round the World and Visits to Various Foreign Countries in the United States Frigate Columbia, Attended by her Consort the Sloop of War John Adams and Commanded by Commodore George C. Read; also Including an Account of the Bombarding and Firing of the Town of Muckie on the Malay Coast and the Visit of the Ships to China during the Opium Difficulties at Canton and Confinement of the Foreigners in that City. Fifth Edition. *New Haven: H. Mansfield, 1846; vol. 1, pp. 317, vol. 2, pp. 332.*

* **Tregear, Edward.** A Phase of Hypnotism. *Transactions of the New Zealand Institute, xxix, 83.* (Polynesian papers iv.)

* ——— Ceremonial Language. *Transactions of the New Zealand Institute, xxvii, 593.* (Polynesian Papers iv.)

* ——— Inaugural Address. *Transactions of the New Zealand Institute, xxxi, 605.* (Polynesian Papers iv.)

* ——— Myths of Observation. *Transactions of the New Zealand Institute, xxvii, 579.* (Polynesian Papers iv.)

——— Notes on the Article entitled, "On the word kangaroo." *Proceedings and Transactions of the Royal Geographical Society of Australasia, xi.* (Polynesian Papers iv.)

* ——— On the Name for a Spider. *Transactions of the New Zealand Institute, xxxii, 298.* (Polynesian Papers iv.)

* ——— Thoughts on Comparative Mythology. *Transactions of the New Zealand Institute, xxx, 49.* (Polynesian Papers iv.)

* **Turner, George.** Nineteen Years in Polynesia. *London: Snow and Co., 1861.*

Waitz, Th. Anthropologie der Naturvölker: vi, Polynesier, Melanesier, Tasmanier, von Gerland. *Leipzig: Fr. Fleischer, 1872.*

Von Willemoes Suhm. Challengerbriefe, 1873-75. *Leipzig: W. Engelmann, 1877.*

* **Wilkes, Charles, U.S.N.** Narrative of the United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842. *Philadelphia: Lea & Blanchard, 1845. Vol. 2, pp. xi, 476; vol. 4, pp. xiii, 539; vol. 5, pp. xii, 558.*

* **Williams, John.** A Narrative of Missionary Enterprises in the South Sea Islands, with Remarks upon the Natural History of the Islands, Origin, Languages, Traditions and Usages of the Inhabitants. (First American Edition.) *New York: D. Appleton & Co., n. d., pp. xxiv, 525, 1 map, 26 illustrations.*

* **Wilson, Captain James.** A Missionary Voyage to the Southern Pacific Ocean Performed in the Years 1796, 1797, 1798, in the Ship Duff, Commanded by Captain James Wilson. Compiled from Journals of the Officers and the Missionaries, and Illustrated with Maps, Charts and Views, drawn by Mr. William Wilson and Engraved by the most Eminent Artists, with a preliminary Discourse on the Geography and History of the South Sea Islands, and an Appendix, including Details Never Before Published of the Natural and Civil State of Otaheite, by a Committee Appointed for the Purpose by the Directors of the Missionary Society: Published for the Benefit of the Society. *London: Printed by S. Gosnell for T. Chapman, 1799. pp. c, 420 (12), 7 maps, 6 plates.*

Kava-kava. Information compiled from the various sources of botanical and pharmaceutical knowledge, clinical reports, physiological researches, etc., concerning Kava-kava (Piper methysticum, Foster). *Detroit: Pharmacology of the newer materia medica, p. 874.* (Polynesian Papers ii.)

Tonga. Information compiled from the various sources of botanical and pharmaceutical knowledge, clinical reports, physiological researches, etc., concerning Tonga. *Detroit: Pharmacology of the newer materia medica, p. 1176.* (Polynesian Papers ii.)

AMBOINA

- * **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.
(In the dialects of Liang, Batumerah, Lariko, Saporua.)

MOTA.

BANKS ISLANDS.

- * **Codrington, R. H.** Notes on the customs of Mota, Banks Islands. *Transactions of the Royal Society of Victoria* xvi, 119. (Polynesian Papers vi.)

* ——— Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 252.

- * **Codrington, Rev. R. H., and Ven J. Palmer.** A dictionary of the language of Mota, Sugarloaf Island, Banks Islands, with a short grammar and index. London, 1896: Society for Promoting Christian Knowledge. Pp. xxiii, 312.

MERLAV.

- * **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 357.

SADDLE ISLAND.

- * **Codrington, R. H.** Comparative Motlav vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Motlav grammar. Melanesian Languages, p. 310.

* ——— Comparative Volow vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Volow grammar. Melanesian Languages, p. 322.

SANTA MARIA.

- * **Codrington, R. H.** Comparative Gaua (Gog) vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Gaua (Gog) grammar. Melanesian Languages, p. 367.

* ——— Comparative Lakon vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Lakon grammar. Melanesian Languages, p. 377.

UREPARAPARA.

- * **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 384.

VANUA LAVA.

- * **Codrington, R. H.** Comparative Pak vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Pak Grammar. Melanesian Languages, p. 332.

* ——— Comparative Sasar vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Sasar grammar. Melanesian Languages, p. 337.

- * ——— Comparative Vureas vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Vureas grammar. Melanesian Languages, p. 345.

* ——— Comparative Mosina vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Mosina grammar. Melanesian Languages, p. 350.

- * ——— Comparative Alo Teqel vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Alo Teqel grammar. Melanesian Languages, p. 355.

* Meade, New Zealand and South Sea Islands, p. 264.

BISMARCK ARCHIPELAGO.

* **Brown, Rev. G.** Notes on the Duke of York Group, New Britain and New Ireland (contains a vocabulary of 58 words from Duke of York and 19 from New Ireland). *Journal of the Royal Geographical Society*, 1877, 137. (Polynesian Papers, v. 113.)

* **Churchill, William.** Parkinson's Dreissig Jahre: Review. *Bulletin American Geographical Society*, xl, 368.

Hesse-Wartegg, Ernst von. See Samoa. (The Bismarck Archipelago comprises pages 81-206, and deals with Herbertshöhe, Neu-Pommern, Gazellenhalbinsel, Sandwich Inseln, Neu-Mecklenburg, St. Matthias Inseln, Lauenburg Archipel, and Mioko.)

* **Mead, Charles W.** The Bismarck Archipelago collection. *American Museum Journal*, vii, 37-42, 3 illustrations.

* **Parkinson, R.** Dreissig Jahre in der Südsee: Land und Leute, Sitten und Gebräuche im Bismarckarchipel und auf den Deutschen Salomoinseln. Herausgegeben von Dr. B. Ankermann, Direktor-Assistent am Königlichen Museum für Völkerkunde zu Berlin. *Stuttgart: Strecker und Schröder*, 1907, pp. xxii, 876, 4 maps, 56 plates, 141 text illustrations.

* **Powell, Wilfred.** Observations on New Britain and neighboring islands. *Proceedings of the Royal Geographical Society*, February, 1881. (Polynesian Papers, v, 105.)

Ray, Sidney H. Texts in the languages of the Bismarck Archipelago. (New Britain and Duke of York texts, with bibliography.) *Zeitschrift für afrikanische und oceanische Sprachen* i, 334.

Schnee, Dr. Heinrich. Bilder aus des Südsee: Unter den kannibalischen Stämmen des Bismarck-Archipels. *Berlin: Dietrich Reimer*, 1904.

Stephan, Dr. Emil. Südseekunst: Beiträge zur Kunst des Bismarck-Archipels und zur Urgeschichte der Kunst überhaupt. *Berlin: Dietrich Reimer*, 1907, pp. 15, 145.

Thilenius, Dr. G. Ethnographische Ergebnisse aus Melanesien: zweiter Theil, Die westlichen Inseln des Bismarck Archipels. (Tau, Agomes, Kaniet, Ninigo, Popolo-Hunt.) *Halle: Nova Acta, Abhandlungen der Kaiserlichen Leopold-Carolinischen deutschen Akademien der Naturforscher*, Band lxxx, Nr. 2, 1903, pp. 260, 20 plates, 113 text illustrations.

ADMIRALTY ISLANDS.

Meier, Rev. Jos. Berichtigungen zu Dr. Schnee's Mitteilungen über die Sprache der Moanus. *Anthropos*, i, 210, 472.

DUKE OF YORK GROUP.

* **Codrington, R. H.** Comparative vocabulary of 69 words. *Melanesian Languages*, p. 39.

* ——— Grammar. *Melanesian Languages*, p. 565.

NEW BRITAIN.

Bley, B. Grundzüge der Grammatik der Neu-Pommerschen Sprache an der Nordküste der Gazellen-Halbinsel. *Zeitschrift für afrikanische und oceanische Sprachen*, iii, 85.

NEW IRELAND.

Abel, Father. Knabenspiele auf Neu-Mecklenburg. *Anthropos* i, 818.

* **Duffield, A. J.** Notes on the inhabitants of New Ireland and its archipelago, their fine and industrial arts, customs and language. (A vocabulary of 350 words.) *Proceedings of the Royal Society of Queensland* i, 115. (Polynesian Papers v, 150.)

D'Urville, Dumont. Vocabulary of Port Praslin. Voyage de l'Astrolabe vol. ii, Philologie, p. 143. (Polynesian Papers vi.)

Gaimard. Vocabulary of Carteret Harbor. Voyage de l'Astrolabe, vol. ii, Philologie, p. 143. (Polynesian Papers vi.)

Stephan, Dr. Emil und **Dr. Fritz Graebner.** Neu-Mecklenburg: Die Küste von Umuddu bis Kap St. Georg. Forschungsergebnisse bei den Vermessungsfahrten von S.M.S. Möwe im Jahre 1904. Berlin: Dietrich Reimer, 1907, pp. xii, 242.

BONIN ISLANDS.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, chap. xxxiv, p. 534.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 411.

BURU ISLANDS.

* **Turner, George.** Comparative vocabulary of 59 words in dialects of Cajeli, Massaratty, and Amblaw. Samoa, p. 354.

CAROLINE ISLANDS.

Christian, F. W. Notes from the Caroline Islands, pp. 14. (Polynesian Papers i.)

* ——— On the Distribution and Origin of Some Plant and Tree Names in Polynesia and Micronesia. *Extract Journal of the Polynesian Society*, pp. 18.

* ——— The Caroline Islands: Travel in the Sea of the Little Islands. London: Methuen and Co., 1899, pp. xiii, 412, 43 plates, 5 maps.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 473.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 343.

KUSAIE.

* **Christian, F. W.** Table of Letter Changes in the Dialects of Ponape and Kusaie. *Extract Journal of the Polynesian Society*, pp. 9.

Text, John iii: 16. Alexander: Islands of the Pacific, 503.

PONAPE.

* **Christian, F. W.** Table of Letter Changes in the Dialects of Ponape and Kusaie. *Extract Journal of the Polynesian Society*, pp. 9.

Gulick, L. H. Ponape, or Ascension Island. *Silliman's Journal*, second series, xxvi, 34. (Polynesian Papers v, 25.)

Text, John iii: 16. Alexander: Islands of the Pacific, p. 503.

TOBI.

Comparative vocabulary of 10 words, source unidentified. (Polynesian Papers v, 223.)

YAP.

Salesius, Father. Die Karolinen-Insel Jap: Ein Beitrag zur Kenntniss von Land und Leuten in unseren deutschen Südsee-Kolonien. Berlin: Wilhelm Süsserott, n. d., pp. 173.

CELEBES.

* **Turner, George.** Comparative vocabulary of 59 words in the dialects of Bolang-hitam, Buton, Menado, Salayer. Samoa, p. 354.

TOGEAN.

Rosenberg, C. B. H. von. De Togeian-Eilanden (contains a vocabulary of 88 words). Amsterdam: Werken van het koninklijk Instituut voor Taal-, Land- en Volkerkunde van Nederlandsch-Indië; tweede Afdeling; afzonderlijke Werken, 1865. (Polynesian Papers vi.)

CERAM.

* **Turner, George.** Comparative vocabulary of 59 words in the dialects of Ahtiago, Awaiya, Caimarian, Gah, Teluti, Tobo, Wahai. Samoa, p. 354.

CHART.

* Dalrymple's chart of the South Pacific Ocean, pointing out the discoveries made therein previous to 1764. (Reduced copy, showing tracks of Mendaña, Lemaire and Schouten, Quiros and Torres, Roggewein, Tasman.) (Polynesian Papers v, 91a.)

Melanesia, comprising New Caledonia and the Loyalty Islands, New Hebrides and Santa Cruz, and part of the Solomon Group, illustrating tracks of many discoverers. (A manuscript plot of the traverse of D'Entrecasteaux, Cook, Bougainville. Quiros, Torres, Bligh, Edwards, D'Urville, Carteret, Mendaña, Dillon, the Duff.) (Polynesian Papers v, 91b.)

EASTER ISLAND.

* **Cooke, Dr. George H., U. S. N.** Te Pito Te Henua. Known as Rapa Nui, commonly called Easter Island. Report of the National Museum, 1897, pp. 689-723. Washington: Government Printing Office, 1899.

* **Croft, Thomas.** Letter to Prof. George Davidson on the hyloglyphs of Easter Island. *Proceedings of the California Academy of Sciences*, v. 317. (Polynesian Papers v, 85.)

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 90.

Hoffman, Dr. Walter James. The beginnings of writing (Easter Island hyloglyphs, pp. 29 and 122). New York: D. Appleton and Co., 1895, pp. xiv, 209.

Geiseler, Capt. Die Oster-Insel: Eine Stätte prähistorischer Kultur in der Südsee. Berlin: Ernst Siegfried Mittler und Sohn, 1883, pp. 54, 22 lithograph plates, 1 map.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 228.

ELLICE ISLANDS.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 430.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 131.

Wilkes, Narrative v, cap. 2.

* **Smith, S. Percy.** The First Inhabitants of the Ellice Group. *Extract Journal of the Polynesian Society*, pp. 2.

FUNAFUTI.

David, Mrs. Edgeworth. Funafuti: or three months on a coral island, an unsentimental account of a scientific expedition. London: John Murray, 1899, pp. xv, 318, 17 plates, 1 text illustration, map.

* **Turner, George.** Samoa, p. 281.

NANUMANGA.

* **Turner, George.** Samoa, p. 288.

NANUMEA.

* **Turner George.** Samoa, p. 291.

NIUTAO.

* **Turner, George.** Samoa, p. 287.

NUI.

* **Turner, George.** Samoa, p. 300.

NUKUFETAU.

* **Turner George.** Samoa, p. 284.

NUKULAEAE.

* **Turner, George.** Samoa, p. 280.

VAITUPU.

* **Turner, George.** Samoa, p. 283.

FALCON ISLAND.

Churchill, Llewella Pierce. Saw an island created. *New York Sun*, May 21, 1899.

FUTUNA.

Grézel, le Père. Dictionnaire Futunien-Français avec notes grammaticales. *Paris: Maisonneuve et Cie.*, 1873, pp. 304.

Meinecke, Dr Carl E. Die Inseln des stillen Oceans ii, 90.

Murray, Wonders in the Western Isles, chap. 2.

GILBERT ISLANDS.

Bingham, Rev. Hiram. A Gilbertese-English Dictionary. *Boston: American Board of Commissioners for Foreign Missions*, 1908, pp. viii, 179.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 437.

Krämer, Dr. Augustin. Hawaii, Ostmikronesien und Samoa, p. 253.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 316.

Te Nu Tetamenti ae ana taeka ara uea ao ara tia kamaiu are Iesu Kristo ae kaetaki man taetaen erene. *Nu Iaaki: e boretiaki iroun te koraki n Amerika, aika tani kabuta aonaba ni baibara, are moa ni karikari n te ririki MDCCCXVI*, 1892, pp. 581. (Dr. Hiram Bingham's translation of the New Testament, contains the rendering, only possible to New England orthodoxy, of minita (minister) for bishop in I Timothy, lii, 1.)

Text John iii: 16. Alexander: Islands of the Pacific, p. 502.

* **Wilkes**, Narrative v, chap. 2.

ARORAE.

* **Turner, George.** Samoa, p. 294.

NIKUNAU.

* **Turner, George.** Samoa, p. 296.

ONOATO.

* **Turner, George.** Samoa, p. 299.

PERU.

* **Turner, George.** Samoa, p. 297.

TAMANA.

* **Turner, George.** Samoa, p. 293.

TARAWA.

Comparative vocabulary of 11 words, source unidentified. (Polynesian Papers v, 125.)

GILOLO.

* **Turner, George.** Comparative vocabulary of 59 words in the dialects of Galela and Gani. Samoa, p. 354.

HAWAII.

Alexander, William DeWitt. A brief history of the Hawaiian people. Published by order of the Board of Education of the Hawaiian Kingdom. *New York, etc.: American Book Company (1891)*, pp. xi, 341.

— A brief account of the Hawaiian Government Survey, its objects, methods and results. Published by order of the Minister of the Interior of the Hawaiian Kingdom. *Honolulu Bulletin Steam Print*, 1889, pp. 26.

— A short synopsis of the most essential points in Hawaiian grammar. *Honolulu: Press Publishing Co.*, 1891, pp. 59. (Polynesian Papers iv.)

— A short synopsis of the most essential points in Hawaiian grammar. *Honolulu: Thomas G. Thrum*, 1908, pp. 59.

Alexander, William DeWitt. Early improvements in Honolulu Harbor. Fifteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

—— Early trading in Hawaii. Paper 11, Hawaiian Historical Society, 1904, pp. 22-24. (Hawaiian Papers, iii.)

—— Economic and political changes in British Polynesia. Paper 12, Hawaiian Historical Society, 1905, pp. 12-33. (Hawaiian Papers iii.)

—— Obituary of Abraham Fornander. Fourteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

—— The career of a Chilean pirate and its capture in 1822. Paper 13, Hawaiian Historical Society, 1906, p. 32-38. (Hawaiian Papers iii.)

—— The funeral rites of Prince Kealiiahonui. Fourteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

—— The maker of the Hawaiian flag. Sixth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

—— The proceedings of the Russians on Kauai, 1814-1816. Paper 6, Hawaiian Historical Society, p. 20. (Hawaiian Papers ii.)

—— The relations between the Hawaiian Islands and Spanish America in early times. Paper 1, Hawaiian Historical Society, p. 11. (Hawaiian Papers ii.)

—— The story of Cleopatra's Barge. Paper 13, Hawaiian Historical Society, 1906, pp. 24-31, 1 plate. (Hawaiian Papers iii.)

—— The uncompleted treaty of annexation of 1854. Paper 9, Hawaiian Historical Society, p. 67. (Hawaiian Papers ii.)

* **Andrews, Lorrin.** A dictionary of the Hawaiian language, to which is appended an English-Hawaiian vocabulary and a chronological table of remarkable events. *Honolulu, H. I.: printed by Henry M. Whitney, 1865, pp. xvi, 559.*

Atkinson, Alatau T. Early voyagers of the Pacific Ocean. Paper 4, Hawaiian Historical Society, p. 16. (Hawaiian Papers ii.)

Ballou, Howard M. The reversal of the Hawaiian flag. Paper 12, Hawaiian Historical Society, 1905, pp. 5-11. (Hawaiian Papers iii.)

Ballou, Howard M. and George R. Carter. The History of the Hawaiian Mission Press with a Bibliography of the Earlier Publications. Paper 14, Hawaiian Historical Society, p. 9, 8 plates.

Bibliography. List of books relating to Hawaii (including references to collected works and periodicals). A. P. C. Griffin, Assistant Librarian of Congress. *Washington: Government Printing Office, 1898, pp. 26.*

Bingham, Hiram. A residence of twenty-one years in the Sandwich Islands; or, the civil, religious and political history of those islands: comprising a particular view of the missionary operations connected with the introduction and progress of Christianity and civilization among the Hawaiian people. *Hartford, Henry Huntington, New York: Sherman Converse, 1847, pp. xvi, 616, 7 plates.*

* **Bird, Isabella L.** The Hawaiian Archipelago: Six Months among the Palm Groves, Coral Reefs and Volcanoes of the Sandwich Islands. Seventh Edition. *New York: G. P. Putnam's Sons, 1894, pp. xvi, 318, 1 map, 11 illustrations.*

Churchill, Llewella Pierce. A dream of Empire. *New York Commercial Advertiser, January 12, 1901.*

—— Hawaiian luck signs. *New York Sun, August 27, 1898.*

* Cook, book 3, chap. 11-13; book 5, chap. 1-8.

Davison, Dr. Charles. Hawaiian medicine. *Detroit: Medical Age, May 25, 1899.* (Polynesian Papers i.)

Day, Mrs. Frank R. The Princess of Manoa, and other romantic tales from the folk-lore of old Hawaii. *San Francisco: Paul Elder & Co. (1906), pp. vii, 83.*

Dole, Sanford B. Evolution of Hawaiian land tenures. Paper 3, Hawaiian Historical Society, pp. 18. (Hawaiian Papers ii.)

* **Ellis, Polynesian Researches**, vol. 4.

Emerson, J. S. He hoakakaolelo no na huaolelo Beritania i mea kokua i na kanaka Hawaii e ao ana ia olelo. (An explanation of the English language to help Hawaiians learn that speech.) *Lahainaluna: Kulanui, 1845, pp. x, 184.* (A rare and curious volume showing that the kulanui was decidedly out of sorts.)

Emerson, Joseph S. The lesser Hawaiian gods. Paper 2, Hawaiian Historical Society, pp. 24. (Hawaiian Papers ii.)

— Some Hawaiian beliefs regarding spirits. Ninth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

Emerson, Dr. N. B. A preliminary report on a find of human bones exhumed in the sands of Waikiki. Ninth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

— Mamala-hoa. Tenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

— Regarding ho-ao, Hawaiian marriage. Sixth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

— The Honolulu fort. Eighth annual report of the Hawaiian Historical Society. 1 plate. (Hawaiian Papers iii.)

— The long voyages of the ancient Hawaiians. Paper 5, Hawaiian Historical Society, pp. 34. (Hawaiian Papers ii.)

— The poetry of Hawaii. Eleventh annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

* **Fornander, Abraham.** An account of the Polynesian race, its origin and migrations and the ancient history of the Hawaiian people to the times of Kamehameha I. *London: Trübner & Co., vol. 1, 2d edition, 1890, pp. xvi, 247; vol. 2, 1880, pp. vii, 399; vol. 3, Comparative vocabulary of the Polynesian and Indo-European languages, 1885, pp. xii, 292.*

— Story of Kahahana. Fourteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

Frear, Chief Justice W. F. The development of Hawaiian Statute Law. Thirteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

— The evolution of the Hawaiian judiciary. Paper 7, Hawaiian Historical Society, pp. 25. (Hawaiian Papers ii.)

Gilman, Gorham D. Journal of a Canoe Voyage along the Kauai Palis made in 1845. Paper 14, Hawaiian Historical Society.

— A kona storm. Paper 12, Hawaiian Historical Society, 1905, pp. 34-37. (Hawaiian Papers iii.)

— Rustications on Kauai and Niihau in the summer of 1845. Fifteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

Goodale, Warren. Honolulu in 1853. Paper 10, Hawaiian Historical Society, pp. 32. (Hawaiian Papers iii.)

Gowen, Rev. Herbert H. Hawaiian idylls of love and death. *New York: Cochrane Publishing Co., 1908, pp. 109, 1 plate.*

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, chap. xix-xxi, p. 261.

Hawaiian Government Survey—W. D. Alexander, Surveyor General. Maui, Hawaiian Islands. Primary triangulation by W. D. Alexander and S. E. Bishop. Boundaries and topography by W. D. Alexander, C. J. Lyons, M. D. Monarratt, F. S. Dodge, S. E. Bishop, E. D. Baldwin and W. R. Lawrence. Map by F. S. Dodge. Scale, 1:60,000. 1885.

Hawaiian Government Survey—Oahu, Hawaiian Islands. Map by C. J. Lyons. From trigonometrical surveys by W. D. Alexander, C. J. Lyons, J. F. Brown, M. D. Monsarrat and William Webster. Finished map by Rich'd Covington. 1881. Scale, 1:60,000.

— Map of the island of Hawaii, Hawaiian Islands. Primary triangulation by W. D. Alexander, C. J. Lyons and J. S. Emerson. Boundaries and topography by C. J. Lyons, J. S. Emerson, J. M. Lydgate, J. F. Brown, F. S. Lyman and J. M. Alexander. Map by W. A. Wall. Scale, 1:240,000. 1886. Preliminary edition. Kau and Puna surveys not completed.

Hawaiian Historical Society. (Hawaiian Papers ii.)

Constitution, pp. 4.

Catalogue of the bound books, 1897, pp. 29.

First annual report, 1893, pp. 20.

Third annual report, 1895, pp. 23 (the second was not printed).

Fourth annual report, 1896, pp. 40.

Fifth annual report, 1897, pp. 32. (Hawaiian Papers iii.)

Sixth annual report, 1898, pp. 27.

Seventh annual report, 1900, pp. 32.

Eighth annual report, 1900, pp. 29.

Ninth annual report, 1902, pp. 24.

Tenth annual report, 1903, pp. 39.

Eleventh annual report, 1903, pp. 25.

Twelfth annual report, 1904, pp. 36.

Thirteenth annual report (1905), pp. 64.

Fourteenth annual report, 1906, pp. 51.

Fifteenth annual report, 1907, pp. 58.

Papers 1 to 9, without date (entered fully under authors' names).

Hayne, Julien D. The Hawaiian, Honolulu, 1895, vol. i, Nos. 2, 3, 4, 5, 6. With its sixth number this monthly of some pretensions and fervid royal leanings failed. (Hawaiian Papers i.)

Henry Teuira. Tahitian folklore compared with the Samoan and Hawaiian. Fifth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

Hunnewell, James. Honolulu in 1817 and 1818. Paper 8, Hawaiian Historical Society, 1895, pp. 22. (Hawaiian Papers ii.)

James, T. Horton. The Sandwich and Bonin Islands. Fifteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

Judd, Laura Fish. A suppressed chapter of Hawaiian history (annexation treaty of 1854). Tenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

Kamehameha V. Correspondence relating to the last hours of. Sixth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

* **Krämer, Dr. Augustin.** Hawaii, Ostmikronesien und Samoa. (Hawaii, pages 62-142.)

Lydecker, Robert C. The archives of Hawaii. Paper 13, Hawaiian Historical Society, 1906, pp. 5-23, 1 plate. (Hawaiian Papers iii.)

Lyman, R. A. Recollections of Kamehameha V. Third Annual Report of the Hawaiian Historical Society. (Hawaiian Papers ii.)

Lyons, Curtis J. A history of the Hawaiian Government Survey with notes on land matters in Hawaii. Appendixes 3 and 4 of Surveyor's Report for 1902. Honolulu: Printed by the Hawaiian Gazette Company, 1903, pp. 63, 2 plates.

— Traces of Spanish influence in the Hawaiian Islands. Paper 2, Hawaiian Historical Society, p. 3. (Hawaiian Papers ii.)

McKonochie, Alexander, Commander R. N. Considerations on the propriety of establishing a colony on one of the Sandwich Islands. Fourteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers, iii.) Also, in Lieutenant-Commander Beach's "David Porter."

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 271.

Minutes of meeting of commissioners held March 12, 1843. Fourteenth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

Nakuina, Mrs. Emma M. The legend of the shark man, Nanaue. Fourth annual Report of the Hawaiian Historical Society. (Hawaiian Papers ii.)

Neuman, Paul. Captain Hypolite Bouchard and his treaty with Kamehameha I. Fifth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

* **Perkins, Edward T.** Na Motu.

Stevenson, Robert Louis. Father Damien: An open letter to the Reverend Doctor Hyde of Honolulu. *Portland, Maine: Thomas B. Mosher, 1905, pp. viii, 34.*

Stoddard, Charles Warren. Hawaiian Life, being lazy letters from low latitudes. *New York: F. Tennyson Neely, 1894, pp. 288.*

— South Sea Idyls. *New York: Charles Scribner's Sons, 1892, pp. x, 340.*

— The Island of Tranquil Delights. *Boston: Herbert B. Turner & Co., 1904, pp. 318.*

— The Lepers of Molokai. New edition, enlarged. *Notre Dame, Ind., the Ave Maria Press, n. d. (1908), pp. 138.*

* **Taylor,** Voyage of the Columbia. vol. 2, section viii.

* **The Aquatic Resources of the Hawaiian Islands.** Part I: The shore fishes, by David Starr Jordan and Barton Warren Evermann. Part II: The deep-sea fishes, by Charles Henry Gilbert. Part III: The commercial fisheries, by John N. Cobb. *Washington: Bulletin of the United States Fish Commission, vol. xxiii, for 1903, pp. xxxix, 765, 1905.*

Thrum, Thomas G. Hawaiian Almanac and Annual for 1897. *Honolulu: Press Publishing Co., 1897, pp. 180.* (Hawaiian Papers i.)

— Hawaiian Almanac and Annual for 1898. *Honolulu: Press Publishing Co., 1898, pp. 199.* (Hawaiian Papers i.)

Towse, Ed. Some Hawaiians abroad. Paper 11, Hawaiian Historical Society, 1904, pp. 22. (Hawaiian Papers iii.)

— Voyage of the schooner Tetautua. Twelfth annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

* **Tregear, Edward.** The creation song of Hawaii. *Journal of the Polynesian Society, ix, 38.*

* **Turner, George.** Comparative vocabulary of 120 words. Samoa, pp. 354.

Whitney, Henry W. The Hawaiian Guide Book for travelers, containing a brief description of the Hawaiian Islands, their harbors, agricultural resources, plantations, scenery, volcanoes, climate, population and commerce. First edition. *Honolulu, H. I.: Published by Henry M. Whitney, 1875, pp. 144, 1 map, 2 plates.*

* **Wilkes'** Narrative iv, 1-287.

Winslow, Dr. C. F. Placenta burial and land title. *Proceedings of the Boston Society of Natural History, vi, 414.* (Polynesian Papers v, 112.)

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers, v. 121.)

Ka baibala hemolele o ke kauoha kahiko a me ke kauoha hou: i unuhiia mai-loko mai o na olelo kahiko, a hooponopono hou ia. *Nu Yoka: ua paia no ko Amerika poe hoolaha Baibala, i hookumuia i ka makahiki MDCCCXVI, 1884, pp. 1199, 339.*

Text John iii: 16. Alexander: Islands of the Pacific, p. 501.

Hawaii, the paradise and inferno of the Pacific. *Honolulu: Hawaiian Bureau of Information, 1892.*

The Hawaiian Islands, their resources, agricultural, commercial and financial; Coffee, the coming staple product. *Honolulu: Department of Foreign Affairs, 1896, pp. 95.* (Hawaiian Papers ii.)

HERVEY GROUP.

Gill, Rev. William Wyatt. Life in the southern isles. *London: Religious Tract Society.*

— Myths and songs from the South Pacific. *London: King & Co., 1876.*

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 333.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 137.

* **Williams, John.** Narrative of Missionary Enterprises.

AITUTAKI.

* **Gudgeon, Lt.-Col. W. E.** Origin of the ta-tatau or heraldic marks at Aitutaki. *Journal of the Polynesian Society, xiv, 217.*

* **Large, J. T.** Aitutaki version of the song of Iro. *Journal of the Polynesian Society, xii, 133.*

ATIU.

* **Cook,** book 2, chap. 2.

MANGAIA.

* **Cook,** book 2, chap. 1.

RAROTONGA.

* **Browne, Arthur H.** (translator). An account of some early ancestors of Rarotonga. *Journal of the Polynesian Society vi, 1.*

* **Smith, S. Percy.** Arai-te-Tonga, the ancient marae at Rarotonga. *Journal of the Polynesian Society xii, 218.*

South Sea Bubbles, by the Earl and the Doctor.

Te Bibilia Tapu ra, koia te Kororomotu Taito e te Kororomotu ou: i Kiritiia ei Reo Rarotonga. *Lonedona: Roromiia e R. Clay and Sons, Ltd., London and Bungay, na te Societi Bibilia i Beritani e te au Enua Katoa, i Akatupuia i Lonedona i te Mataiti, 1804, 1895. pp. 1239.*

Text John iii: 16. Alexander: Islands of the Pacific, p. 501.

* **Turner, George.** Comparative vocabulary of 122 words. Samoa, p. 354.

JAVA.

* **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.

KINGSMILL GROUP.

* **Wilkes,** Narrative v, chap. 3.

LADRONES.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 515.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 387.

GUAM.

Bibliography. A list of books (with references to periodicals) on Samoa and Guam. Compiled under the direction of A. P. C. Griffin, chief of division of bibliography, Library of Congress. *Washington: Government Printing Office, 1901.*

Matthews, Franklin. Guam, our lonely little isle. *New York Sun*, April 21, 1907.

* **Safford, William Edwin.** Guam and its people. *Washington: Annual Report of the Smithsonian Institution, 1902, p. 493.*

* ——— The Chamorro language of Guam. Reprints from the American Anthropologist, vols. 5-7.

——— The useful plants of the island of Guam, with an introductory account of the physical features and natural history of the island, of the character and history of its people, and of their agriculture. *Washington: Contributions from the United States National Herbarium, ix, 1905.*

SAIPAN.

Fritz, Georg. Chamorro-Wörterbuch: in zwei theilen, Deutsch-Chamorro und Chamorro-Deutsch. Auf der Insel Saipan, Marianen, gesammelt. *Berlin: Archiv für das Studium deutscher Kolonialsprachen, Band ii, Commissionsverlag von Georg Reimer, 1904, pp. vi, 124.*

LIFU.

LOYALTY ISLANDS.

A. C. Notes grammaticales sur la langue de Lifu d'après les manuscrits du P. F. P. (Contains 14 pages of prayers in the language.) *Paris: Maisonneuve et Cie., 1882, pp. 72.*

Gabelentz, H. C. von der. Die melanesischen Sprachen.

Isisinyikeu ka Nyipixe i Johu Iesu Keriso, hna Ujane Qangöne la Qene Eleni Kowe la Qene Dehu. *London: 1873, pp. 493.* (New Testament.)

* **Turner, George.** Comparative vocabulary of 122 words. Samoa, p. 354.

Murray, Wonders in the Western Isles, chap. 12.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 124.)

MARE.

* **Codrington, R. H.** Comparative Nengone vocabulary of 69 words. Melanesian Languages, p. 39.

* ——— Nengone grammar. Melanesian Languages, p. 478.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

Murray, Wonders in the Western Isles, chap. 11.

Murray, Martyrs of Polynesia, chap. 10-11.

* **Turner, George.** Comparative vocabulary of 125 words. Samoa, p. 337, 354.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 124.)

UVEA.

Murray, Martyrs of Polynesia, chap. 12-13.

MADAGASCAR.

* **Codrington, R. H.** Comparative Maiagasy vocabulary of 70 words. Melanesian Languages, p. 39.

Marré. Vocabulaire systématique, comparatif, des principales racines des langues Malgache et Malayo-Polynésiennes, n. p., 1885, pp. 83-214. (The comparisons are with languages from Malay to Tagalog, no true Polynesian tongues in the number.) (Polynesian Papers ii.)

* **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 121.)

MALAY.

* **Belcher, Capt. Sir Edward.** Narrative of the Voyage of H. M. S. Samarang, During the Years 1843-46, Employed Surveying the Islands of the Eastern Archipelago, Accompanied by a brief Vocabulary of the Principal Languages. Published under the Authority of the Lords Commissioners of the Admiralty; with Notes on the Natural History of the Islands by Arthur Adams, Assistant-Surgeon, R.N. London: Reeve, Benham and Reeve, 1848. Vol. 1, pp. xl, 358, 5 maps, 25 plates; Vol. 2, pp. 576, 5 plates.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* **Comparative vocabulary** of 621 words. Belcher: Voyage of Samarang ii, 540.

* **Kolff, D. H., Jr.** Voyages of the Dutch Brig of War Dourga through the southern and little-known parts of the Moluccan Archipelago and along the previously unknown southern coast of New Guinea, performed during the years 1825 and 1826. Translated from the Dutch by George Windsor Earle, author of the "Eastern Seas." London: James Madden & Co., 1840, pp. xxiv, 365, 2 maps.

* **Turner, George.** Comparative vocabulary of 130 words. Samoa, p. 354.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 121.)

MANAHIKI.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 258.

* **Turner, George.** Notes. Samoa, p. 275.

* ——— Comparative vocabulary of 126 words. Samoa, p. 354.

MANGAREVA.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, 134.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 221.

Tregear, Edward. A dictionary of the Mangareva (or Gambier) Islands. Published under the authority of the Board of Directors of the New Zealand Institute. Wellington: John Mackay, Government Printing Office, 1899, pp. 121. (Polynesian Papers i.)

* **Voyage** of the Duff, chap. 10.

MAORI.

Best, Elsdon. In ancient Maoriland: Being notes collected from the descendants of the aboriginal people of the Rangitaiki Valley and the Ure-wera country and from the Mataatua tribes. Rotorua, N. Z.: F. F. Watt, 1896, pp. 46. (Polynesian Papers ii.)

Colenso, Rev. W. A Maori-English lexicon: Being a comprehensive dictionary of the New Zealand tongue, including mythical, mythological, taboo or sacred, genealogical, proverbial, poetical, tropological, sacerdotal, incantatory, natural-history, idiomatical, abbreviated, tribal and other names and terms of, and allusions to, persons, things, acts and places in ancient times; also, showing their affinities with cognate Polynesian dialects and foreign languages: with copious pure Maori examples. Wellington: by authority; John Mackay, Government Printer, 1898, pp. ix, 111, 21. (Of this monumental work only this sample has ever been published, being the letter A of the Maori-English, and scattered illustrations of the method of treatment in the English-Maori.) (Polynesian Papers i.)

——— On the Maori races of New Zealand. Transactions and Proceedings of the New Zealand Institute, vol. i. (Polynesian Papers v, 63.)

Cook, book I, chap. 7-8.

* **Meade, Herbert.** A Ride Through the Troubled Districts of New Zealand: Together with Some Account of the South Sea Islands: Being Selections from the Journals and Letters of Lieut. the Hon. Herbert Meade, R.N. Edited by his Brother. Second Edition. London: John Murray, 1871, pp. xi, 375, 2 maps, 1 plate, 18 illustrations.

Robin, John. A Trip to Maoriland. By Pakeha Maori. *Lake Placid, N. Y.*, 1907, pp. 57. (A piece of rubbish.)

Smith, S. Percy. The Tohunga-Maori: a sketch. *Transactions of the New Zealand Institute*, xxxii, 253. (Polynesian Papers iv.)

Tregear, Edward. Old Maori civilization. *Transactions of the New Zealand Institute*, xxvi, 533. (Polynesian Papers iv.)

—— The extinction of the moa. *Transactions from the New Zealand Institute*, xxv, 413. (Polynesian Papers iv.)

* ——— The Maori-Polynesian Comparative Dictionary. *Wellington, N. Z.: Whitcomb and Tombs, n. d.*, pp. xxiv, 676.

—— The Maori race. *Wanganui, N. Z.: A. D. Willis*, 1904, pp. xviii, 592.

* **Turner, George.** Comparative vocabulary of 127 words. Samoa, p. 354.

* **Codrington, R. H.** Comparative vocabulary of 68 words. Melanesian Languages, p. 39.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 122.)

Text, John iii: 16. Alexander: Islands of the Pacific, p. 502.

MARQUESAS.

* **Beach, Edward L., Lieutenant-Commander U. S. N.** The pioneer of America's Pacific empire: David Porter. *United States Naval Institute Proceedings*, xxxiv, 543. *Annapolis*, 1908, pp. 28.

Christian, F. W. Notes on the Marquesans. *Extract Journal of the Polynesian Society*, pp. 16.

Dordillon, Mgr. I. R. Grammaire et dictionnaire de la langue des îles Marquises. *Paris: Imprimerie Belin Frères*, 1904, pp. 294, 205.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 231.

Lafond de Lurey, Captain Gabriel. Voyages Autour du Monde et Naufrages Célèbres, vol. 3, chap. 1-5. *Paris*, 1844.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans ii, 235.

* **Melville, Herman.** Typee. *New York: United States Book Company*, 1892, pp. xxxvi, 389.

* **Vincendon-Dumoulin et C. Desgraz.** Iles Marquises ou Nuka-Hiva: histoire, géographie, mœurs et considérations générales d'après les relations des navigateurs et les documents recueillis sur les lieux. *Paris: Arthus Bertrand*, 1843, pp. vii, 362, 4 maps.

* **Turner, George.** Comparative vocabulary of 120 words. Samoa, p. 354.

Text, John iii: 16. Alexander: Islands of the Pacific, p. 501.

* **Voyage** of the Duff, 113.

MARSHALL ISLANDS.

American Board of Commissioners of Foreign Missions. Buk in Jenesis. *New York: American Bible Society*, 1881, pp. 165.

—— Letter ko an Paul dri jilik ñon Dri Rom, Dri Korint, Dri Galetia, Dri Epesos im Dri Pilipai. *New York: American Bible Society*, 1882, pp. 155. To which is added Letter eo mokta an Jon; Letter eo Ken Karuo an Jon; Letter Ken Kajilu an Jon; Buk in Sam. (Epistles to the Romans, Corinthians, Galatians, Ephesians, Philippians, the three Epistles of Saint John and Psalms, 1-xiv.)

American Board of Commissioners of Foreign Missions. New Testament ak Kalimur ekäl an ar iroj im dri lomor Jisös Kraist. *New York: American Bible Society, 1855, pp. 236.* (Version of the New Testament, the epistles somewhat differently rendered from the foregoing.)

Chamisso, Adalbert von. Bemerkungen und Ansichten auf einer Entdeckungsreise in die Südsee und nach der Berings-Strasse: Band iii, Vokabularium der Dialekte Chamori und von Eap, Ulea und Radack. *Weimar, 1821.*

Churchill, Llewella Pierce. Charts of savage navigators. *Forest and Stream, July 7, 1900; The Asian, Calcutta, August 7, 1900.*

Erdland, Father August. Wörterbuch und Grammatik der Marshall-Sprache nebst ethnographischen Erläuterungen und kurzen Sprachübungen. *Berlin: Archiv für das Studium deutschen Kolonialsprachen, Band iv, Druck und Kommissionsverlag von Georg Reimer, 1906, pp. xii, 248.*

Gabelentz, G. von der, und A. Meyer. Beiträge zur Kenntniss der melanesischen, mikronesischen und papuanischen Sprachen. *Abhandlungen der phil.-historischen Klasse der Königl. Sächs. Gesellschaft der Wissenschaften, Band viii, p. 375. Leipzig, 1882.* (There is some doubt as to the authenticity of the Marshall vocabulary in this paper.)

Gabelentz, H. S. von der. Die melanesischen Sprachen. *Above transactions Band iii, 1861; Band vii, 1879.* (A few words from the Marshalls.)

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 452.

Hawaiian Board of Missions. Buk in Bwinbin (arithmetic), 1885, pp. 157.

Hernsheim, Franz. Beitrag zur Sprache der Marshall-Inseln. *Leipzig: 1880, pp. 28.*

Knappe, Dr. Religiöse Anschauungen der Marshall-Insulaner. *Mitteilungen von Forschungsreisenden und Gelehrten aus den deutschen Schutzgebieten von Dr. Freiherr von Danickelman, heft ii, pp. 63-81. Berlin: 1882.*

* **Krämer, Dr. Augustin,** Hawaii, Ostmikronesien und Samoa, pp. 194 and 362.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 316.

Senfft, A. Wörterverzeichnis der Sprache der Marshall-Insulaner. *Zeitschrift für afrikanische und oceanische Sprachen, v, 79.*

Steinbach-Grösser. Wörterbuch der Marshall-Sprache nach hinterlassenen Papieren des verstorbenen Stabsarztes Dr. Erwin Steinbach (vom 1891 bis 1894 Regierungssarzt in Jaluit, Marshall-Inseln) umgearbeitet und herausgegeben von Hermann Grösser, Direktor der Jaluit-Gesellschaft zu Hamburg. *Hamburg: L. Friederichsen und Co., 1902, pp. x, 126.*

Bwebwenato in Baibel jen Kalimur mokta. *New York: American Tract Society, n. d., pp. 336.* (Bible stories.)

The Friend: A monthly journal by Samuel C. Damon, Honolulu. Several fugitive articles on Marshall Islands, 1864 and later.

Text, John iii: 16. Alexander: Islands of the Pacific, p. 502.

EBON.

Doane, E. T. Remarks upon the atoll of Ebon in Micronesia, with chart. *Silliman's Journal, second series, xxxi, 318.* (Polynesian Papers v, 1.)

Gräffe, Dr. E. Die Ebon-Gruppe in Marshall-Archipel nach brieflichen Mitteilungen von J. Kubary. *Journal des Museum Godeffroy, Hamburg, 1873, Band i, heft 1, pp. 33-47.*

* **Turner, George.** Comparative vocabulary of 123 words. Samoa, p. 354.

MILLE.

Comparative vocabulary of 14 words, source unidentified. (Polynesian Papers v, 123.)

MATABELLO.

- * **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.

MAYAPO.

- * **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.

MELANESIA.

Codrington, R. H. La Magie chez les Insulaires Mélanésien: Ouvrage Traduit par M. Émile Cammaerts. *Bruxelles: Université Nouvelle, Institut Géographique, Publication No. 8, 1903, pp. 31.*

- * ——— The Melanesian Languages. *Oxford: Clarendon Press, 1885, pp. viii, 572.*

Gabelentz, Hans Conon von der. Die Melanesischen Sprachen nach ihrem grammatischen Bau und ihrer Verwandtschaft unter sich und mit den malaischpolynesischen Sprachen. *Aus dem VIII Bande der Abhandlungen der Königlich Sächsischen Gesellschaft der Wissenschaften. Leipzig, bei S. Hirzel, 1860, pp. 266.*

——— Id., zweite Abhandlung. *Des VII Bandes der Abhandlungen der philologisch-historischen Classe der Königl. Sächsischen Gesellschaft der Wissenschaften, No. 1. Leipzig: bei S. Hirzel, 1873, pp. 186.*

Gabelentz, Georg von der und Adolf Bernhard Meyer. Beiträge zur Kenntniss der melanesischen, mikronesischen und papuanischen Sprachen, ein erster Nachtrag zu Hans Conon's von der Gabelentz Werke "Die melanesischen Sprachen." *Des VIII Bandes der Abhandlungen der philologisch-historischen Classe der Königl. Sächsischen Gesellschaft der Wissenschaften No. IV. Leipzig, bei S. Hirzel, 1882, pp. 170.*

Goodenough, Commodore. *Journal. London: H. S. King & Co., 1876.*

Macdonald, Rev. Daniel. Oceania, linguistic and anthropological. *Melbourne, M. L. Hutchinson, 1889, pp. xii, 218, plates 7.*

- * **Markham, A. H.** Cruise of the Rosario. *London: S. Low & Co.*

Murray, Rev. A. O. W. Wonders in the Western Isles, Being a Narrative of the Commencement and Progress of Mission Work in Western Polynesia. *London: Printed by Yates & Alexander, 1874 (cover stamped—"Presentation copy, London Missionary Society"), pp. 344, 40 illustrations.*

* **Palmer, Capt.** Kidnapping in the South Seas. *Edinburgh: Edmonston & Douglas, 1871.*

Page, Jesse. Bishop Patteson, the Martyr of Melanesia. *New York: Fleming H. Revell Company, n. d., pp. 160, 1 map, 30 illustrations.*

* **Patteson, John Coleridge.** The Melanesian Mission. Appendix to Mrs. Smythe's Ten Months in the Fiji Islands.

Bishop Patteson: Murray, Martyrs of Polynesia, chap. 14-15.

Schmidt, P. W. Über das Verhältniss der melanesischen Sprachen zu den polynesischen und untereinander. *Wien, 1899: Sitzungsberichte der Kais. Akademie der Wissenschaften in Wien, philosophisch-historische Classe, Band CXXI, 6, pp. 93.*

MIDWAY.

McCullough, Dr. Frank E. The Midway Group. *Washington: Annual Report of the Surgeon-General of the United States Navy for 1900, p. 172. (Polynesian Papers iii, Samoan Relations iii.)*

MORELLA.

- * **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.

MORIORI.

Mair, Gilbert. The Morioris. *Transactions and Proceedings of the New Zealand Institute, iii, 311. (Polynesian Papers v, 34.)*

Travers, H. H. The Morioris. *Transactions and Proceedings of the New Zealand Institute*, i, 174. (Polynesian Papers v, 33.)

Travers, W. T. L. Traditions and Customs of the Morioris. *Transactions and Proceedings of the New Zealand Institute*, ix, 17. (Polynesian Papers v, 36.)

MORTLOCKS.

Text, John iii: 16. Alexander: Islands of the Pacific, p. 503.

MYSOL.

* **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354 (in two dialects).

NAURU.

* **Krämer, Dr. Augustin.** Hawaii, Ostmikronesien und Samoa, p. 441.

NEW CALEDONIA.

Ekonejeu Kabesi ni Dokuj Iesu Keriso, hna Ureie Wene ri Pene Eleni jeu' ore Pene Nengone. (New Testament.) London: 1870, p. 399.

Gabelentz, H. C. von der. Die melanesischen Sprachen (Balade; Duauru)]

* **Meade**, New Zealand and South Sea Islands, p. 291.

Murray, Wonders in the Western Isles, chap. 10.

* **Turner, George.** Notes. Samoa, p. 340.

* ——— Comparative vocabulary of 117 words. Samoa, p. 354.

Comparative vocabulary, source unidentified, of 15 words in the dialects of Duauru, Murare, Nikete, Vengin and Balade. (Polynesian Papers v, 125.)

NEW GUINEA.

Bamler, Missionar. Bemerkungen zur Grammatik der Tamisprache: Vokabular der Tamisprache. *Zeitschrift für afrikanische und oceanische Sprachen*, v, 198.

* **Barbour, Thomas.** Further notes on Dutch New Guinea. *National Geographic Magazine*, xix, 527-545, 19 illustrations.

* **Chalmers, James.** Pioneering in New Guinea, 1877-1894. (Running title: Life and Work in New Guinea.) New York: Fleming H. Revell Company, n. d., pp. (xiv), 255, 1 map, 43 illustrations.

* **Earl, George Windsor.** The Native Races of the Indian Archipelago: Papuans. London: Hippolyte Baillière, 1853, pp. xiv, 239, 5 plates, 2 maps.

Gabelentz and Meyer. Die Sprache von Errüb und Maer. In Erster Nachtrag.

——— Die Sprache in der Bai von Segaar auf New Guinea. In Erster Nachtrag.

Haddon, Alfred C. Evolution in art: as illustrated by the life-histories of designs. London: Walter Scott, *Contemporary Science Series*, 1895, pp. xviii, 364. Contains the Decorative Art of British New Guinea as an example of the method of study, pp. 11-73; also, references with cuts of strictly Polynesian art.

Hesse-Wartegg, Ernst von. Samoa, Bismarckarchipel und Neuguinea. (New Guinea, pp. 3-80, comprises Berlinhafen, Seleu, Potsdamhafen, Friedrich-Wilhelmshafen, Stephansort, Simbang, Finschhafen.)

* **Kolff, D. H., Jr.** Voyages of the Dourga.

Mikluch-Maclay, N. Papua-Dialekte der Maclay-Küste in New Guinea. In G. von der Gabelentz and Meyer.

* **Romilly, Hugh Hastings.** From my Verandah in New Guinea: Sketches and Traditions. With an Introduction (New Guinea Folk-Lore) by Andrew Lang. London: David Nutt, 1889, pp. xxvi, 277, 1 map.

Timoteo. Notes on the Kabadi dialect of New Guinea. Polynesian Papers I.

MOTU.

* **Codrington, R. H.** Comparative vocabulary of 55 words. Melanesian Languages, p. 39.

MURRAY ISLAND.

* **Codrington, R. H.** Comparative vocabulary of 52 words. Melanesian Languages, p. 39.

PORT MORESEY.

* **Turner, George.** Notes. Samoa, p. 347.

* ——— Comparative vocabulary of 35 words. Samoa, p. 354.

NEW HEBRIDES.

Campbell, F. A. A year in the New Hebrides. Melbourne: G. Robertson, 1873.

Eckardt, M. The archipelago of the New Hebrides. *Verhandlungen des Vereins für naturwissenschaftliche Unterhaltung zu Hamburg, 1877.* (Polynesian Papers, v, 94.)

Grimshaw, Beatrice. Fiji and its possibilities. (Malekula, Tanna), p. 155.

* **Markham, A. H.** New Hebrides and Santa Cruz groups. *Journal of the Royal Geographical Society*, xlii, 213. (Polynesian Papers, v, 108.)

Meinecke, Dr. Carl E. Der Archipel der Neu-Hebriden. *Zeitschrift der Gesellschaft für Erdkunde zu Berlin*, ix.

Paton, Rev. James. The story of John G. Paton told for young folks; or, thirty years among South Sea Cannibals. New York: A. C. Armstrong and Son, 1892, pp. 398.

Paton, John G. Missionary to the New Hebrides, an Autobiography. Edited by his Brother. New York: Fleming H. Revell Co., n. d. Vol. 1, pp. xv, 375, 1 portrait; Vol. 2, pp. xvi, 382, 1 plate.

AMBRYM.

* **Codrington, R. H.** Comparative vocabulary of 38 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 449.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

ANEITYUM.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 477.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

Inglis, Rev. John. A Dictionary of the Aneityumese Language: In Two Parts: I. Aneityumese and English; II. English and Aneityumese; also, Outlines of Aneityumese Grammar; and an Introduction, Containing Notices of the Missions to the Native Races and Illustrations of the Principles and Peculiarities of the Aneityumese Language. London: Williams & Norgate, 1882, pp. 200.

——— In the New Hebrides: Reminiscences of Missionary Life and Work, Especially on the Island of Aneityum, from 1850 till 1877. London: T. Nelson & Sons, 1887, pp. xvi, 352, 1 map, 1 plate.

Intas-Etipup Mat u Iesu Kristo, Natimarid Uja, in Natimi Imyiaatamaig Caija: Eris Asuptecnaig Intas Crisi an Tas Aneityum, Nyu Hebrides. *Luntum: Is Ecetaged Nitavotai Ineigki a William M. Watts, Vai Ilpu Raimu Iji Eig Era Ika Ara Eri Ahtai Intas Itaup Imi Nupu Peritani im Nup Urai Iji Taka Peci Asega*, 1863, pp. 381. (New Testament.)

* **Meade**, New Zealand and South Sea Islands, p. 227.

Murray, Martyrs of Polynesia, chap. 7.

Murray, Wonders in the Western Isles, chap. 3-5.

* **Turner, George**. Comparative vocabulary of 127 words. Samoa, p. 354.

— Notes, p. 325.

Comparative vocabulary of 15 words, source unidentified. Polynesian Papers, v, 123.

Text, John iii: 16. Alexander: Islands of the Pacific, p. 502.

ANIWA.

Murray, Wonders in the Western Isles, chap. 8.

Paton's Autobiography, Vol. 2, p. 123.

* **Turner, George**. Comparative vocabulary of 123 words. Samoa, p. 354.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers, v, 123.)

API.

* **Codrington, R. H.** Comparative vocabulary of 51 words. Melanesian Languages, p. 39.

* — Grammar. Melanesian Languages, p. 469.

ARAGA.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* — Grammar. Melanesian Languages, p. 431.

Gabelentz, H. C. von der. Die melanesischen Sprachen (Vun Marama).

EFATÉ.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* — Grammar. Melanesian Languages, p. 471.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

Macdonald, Rev. Daniel. New Hebrides linguistics, introductory, Three New Hebrides Languages: Efatese, Eromangan, Santo. *Melbourne, 1889: printed at the expense of the trustees of the Melbourne Public Library, pp. 134.*

— The oceanic languages, their grammatical structure, vocabulary and origin (Efaté dictionary). *London: Henry Frowde, 1907, pp. xv, 352, 2 maps.*

* **Meade**, New Zealand and South Sea Islands, p. 260.

Murray, Martyrs of Polynesia, chap. 9.

Murray, Wonders in the Western Isles, chap. 9.

* **Turner, George**. Comparative vocabularies of 119 and 121 words, dissimilar, one showing a Polynesian content. Samoa, p. 354.

* — Notes. Samoa, p. 331.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers, v, 124.)

Text, John iii: 16. Alexander: Islands of the Pacific, p. 502.

EROMANGA.

* **Codrington, R. H.** Comparative vocabulary, of 43 words. Melanesian Languages, p. 39.

Gabelentz, H. C. von der. Die Melanesischen Sprachen.

Gordon, Rev. J. D. Sketch of the Eromangan grammar. (In Macdonald's Three New Hebrides Languages.)

Matiyu: ku Nam Navosavos: Ugi Iesu Kristo: Erromaga: Oveteme Beretania ra si Semsimak worumpi ov netiyi tumpora nisekonda lõ sũ lõ sũ dũmumpi imo nisekont. *Sydney: F. Cunninghame and Co. (for the British and Foreign Bible Society), 1890, pp. 443.* (The Four Gospels and the Acts.)

* **Meade**, New Zealand and South Sea Islands, p. 250, 286.

Murray, Martyrs of Polynesia, chap. 3-6.

Murray, Wonders in the Western Isles, chap. 7.

* **Turner, George**. Comparative vocabulary of 128 words. Samoa, p. 354.

* ——— Notes. Samoa, p. 328.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 124.)

Text, John iii: 16. Alexander: Islands of the Pacific, p. 502.

ESPIRITU SANTO,

* **Codrington, R. H.** Comparative vocabulary of 69 words. Melanesian Languages, p. 39.

——— Grammar. Melanesian Languages, p. 441.

Gordon, Rev. J. D. Sketch of the Santo Grammar and Vocabulary. (In Macdonald's Three New Hebrides Languages.)

FOTUNA.

Murray, Martyrs of Polynesia, chap 8.

MAEWO.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

——— Grammar. Melanesian Languages, p. 408.

MAKURA.

Tregear, Edward. The language of Makura. *Journal of the Polynesian Society*, v, 187.

MALEKULA.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

OBA.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 420.

PAAMA.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

SESAKE.

* **Codrington, R. H.** Comparative vocabulary of 65 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 459.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

TANNA.

Gabelentz, H. C. von der. Die Melanesischen Sprachen.

Meade, New Zealand and South Sea Islands, p. 230.

Murray, Martyrs of Polynesia, chap. 8.

Murray, Wonders in the Western Isles, chap. 6.

Paton's Autobiography, Vol. 1, p. 115.

* **Turner, George**. Comparative vocabulary of 121 words. Samoa, p. 354.

* ——— Notes. Samoa, p. 307.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 124.)

NIUAFOOU.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 94.

* **West, Rev. Thomas.** Ten years in South-Central Polynesia, chap. 9.

NIUATOBUTABU.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 96.

* **West, Rev. Thomas.** Ten years in South-Central Polynesia, chap. 9.

NIUE.

* **Churchill, William.** Niuē: A reconnaissance. *Bulletin American Geographical Society*, xi, 150-156, map.

Ko e Maveheaga Fou he Iki ha Tautolu, ko Iesu Keriso; katoa mo e Tohi he tau Salamo; kua Lilliu ke he Vagahau Niuē. (New Testament and Psalms.) London: Printed for the British and Foreign Bible Society, 1881, pp. 754.

Meade, New Zealand and South Sea Islands, p. 179.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 96.

* **Skinner, W. H.** Niuē, or Savage Island. *Journal of the Polynesian Society*, x, 168.

* **Smith, S. Percy.** Notes on the dialect of Niuē Island. *Journal of the Polynesian Society*, x, 178.

* ——— Niuē and its People. *Journal of the Polynesian Society*, xi, 80, 163, 195; xii, 1, 85.

Murray, Wonders in the Western Isles, chap. 13.

* **Thomson, Basil C.** Savage Island, an account of a sojourn in Niuē and Tonga. London: John Murray, 1902, pp. viii, 234, 18 cuts, map of Niuē.

* **Turner, George.** Comparative vocabulary of 125 words. Samoa, p. 354.

* ——— Notes. Samoa, p. 304.

Williams, John. Narrative of Missionary Enterprises.

NORFOLK, ID.

Meade, New Zealand and South Sea Islands, p. 171.

NUKUORO.

Christian, F. W. Nukuoro vocabulary, pp. 9. (Polynesian Papers i.)

ONGTONG, JAVA.

* **Parkinson, R.** Die östlichen Inseln, Nuguria, Tauu und Nukumanu. (Dreissig Jahre in der Südsee, pp. 513-564.)

Thilenius, Dr. G. Ethnographische Ergebnisse aus Melanesien: erster Theil, Reisebericht; die Polynesischen Inseln an der Ostgrenze Melanesiens. Halle: Nova Acta, Abhandlungen der Kaiserlichen Leopold-Carolinischen deutschen Akademien der Naturforscher, Band lxxx, Nr. 1, 1902, pp. 102, 4 plates, 1 map, 9 text illustrations.

PAUMOTU.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 139.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 200.

* **Smith, S. Percy.** Some Paumotu Chants. *Journal of the Polynesian Society*, xii, 221.

Stoddard, Charles Warren. South Sea Idylls. New York: Charles Scribner's Sons, 1892, pp. x, 340.

Wilkes, Narrative iv, 263.

* **Young, J. L.** Names of the Paumotu islands. *Journal of the Polynesian Society*, viii, 264.

PUKAPUKA.

* **Hutchin, Rev. J. J. K.** Traditions and some words of the language of Danger or Pukapuka Island. *Journal of the Polynesian Society*, xiii, 173.

PHENIX GROUP.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 265.

Hague, J. D. On phosphatic guano islands of the Pacific Ocean (Notes on Baker, Howland and Jarvis Islands). *Silliman's Journal*, second series, xxiv, 244. (Polynesian Papers v, 28.)

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 423.

PITCAIRN.

* **Barrow, John, Secretary to the Admiralty.** The Eventful History of the Mutiny of the Bounty. A Description of Pitcairn's Island and its Inhabitants: with an Authentic Account of the Mutiny of the Ship Bounty and of the Subsequent Fortunes of the Mutineers. *New York: J. & J. Harper (Harper's Family Library, No. XXX), 1832, pp. xii, 303, 2 plates.*

* **Delano, Amasa.** A Narrative of Voyages and Travels in the Northern and Southern Hemispheres, comprising three voyages around the world, together with a voyage of survey and discovery in the Pacific Ocean and Oriental Islands. *Boston: Printed by E. G. House for the author, 1817, pp. 599, 3 plates.*

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 98.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 226.

* **Sargent, Charles Lenox.** The Life of Alexander Smith, Captain of the Island of Pitcairn: One of the Mutineers on Board His Majesty's Ship Bounty, Commanded by Lieut. Wm. Bligh. Written by Smith Himself, on the Above Island, and bringing the Accounts from Pitcairn down to the Year 1815. *Boston: Printed by Sylvester T. Goss, 1819, pp. iii, 240.*

Whiteing, Richard. The Island; or, The Adventures of a Person of Quality. *New York: Published by the Century Co., 1899, pp. viii, 223.*

ROTUMA.

* **Calvert, James.** Fiji and the Fijians (last chapter).

* **Codrington, R. H.** Comparative vocabulary of 70 words. *Melanesian Languages*, p. 39.

* ——— Grammar. *Melanesian Languages*, p. 401.

Feag-Hoiporakkiug Foou ne os Gagaja ma Aamauriga Iesu Karisito. *London: Printed for the British and Foreign Bible Society, 1884, pp. 410.* (The New Testament, reprinted from the first edition, printed in Sydney, 1870.)

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 52.

* **Turner, George.** Comparative vocabulary of 116 words. *Samoa*, p. 354.

* **West, Rev. Thomas.** Ten years in South-Central Polynesia, chap. 14.

Comparative vocabulary, source unidentified, 15 words. (Polynesian Papers v, 122.)

SALIBABO.

* **Turner, George.** Comparative vocabulary of 59 words. *Samoa*, p. 354.

SAMOA.

Bastian, A. Teilung der Erde und die Teilung Samoas. Ein Momentaufnahme in augenblicklicher Sachlage. *Berlin: Dietrich Reimer, 1899, pp. 78.*

Beveridge, Rev. S. A. 'O le fa'amatalaga o le gagana Samoa. (The explanation of the Samoan language.) *Malua, Samoa: London Missionary Society, 1902, pp. iv, 78.*

* **Bibliography.** A list of books (with reference to periodicals) on Samoa and Guam. Compiled under the direction of A. P. C. Griffin, chief of division of bibliography, Library of Congress. *Washington: Government Printing Office, 1901, pp. 54.*

— In Krämer's Samoa, vol. i, 470; vol. ii, 435.

Blackwell, Dr. Edward M. Tutuila. *Washington: Annual report of the Surgeon-General, United States Navy, for 1900, pp. 186.* (Polynesian Papers iii, Samoan Relations iii.)

Bülow, W. von. Die samoanische Sprache von heute. *Zeitschrift für afrikanische und oceanische Sprachen*, iii, 344.

Chart. Karte der Samoa. Navigator oder Schiffer Inseln, im Massstabe von 1:800,000, gez. von L. Friederichsen. (Polynesian Papers v, 177.)

Churchill, Llewella Pierce. A communication of the jungle lodge. *Forest and Stream, October 21, 1899.*

— American duty in Samoa. *New York Independent, March 2, 1899, p. 640.*

— A plea for Mata'afa. *New York Independent, June 15, 1899, p. 1639.*

— A Samoan Christmas feast. *Forest and Stream, December 23, 1899.*

— A Samoan life interest. *New York Sun, May 15, 1898.*

— A Samoan tangle. *New York Commercial Advertiser, April 7, 1900.*

— Celebrating Independence Day in Apia. *Burlington (Iowa) Saturday Evening Post, July 7, 1900.*

— Christmas under the palms. *Forest and Stream, December 22, 1900.*

— Consul Coe's Samoan widow. *Burlington (Iowa) Saturday Evening Post, Sept. 29, 1900.*

— Crayfishing up the Vaivasa. *Forest and Stream, August 26, 1899.*

— Débris of the Apia hurricane. *Burlington (Iowa) Saturday Evening Post, August 11, 1900.*

— Deutsche interessen auf Samoa. *New York Staats Zeitung, April 30, 1899.*

— Fishing the Mulivai-tō. *Forest and Stream, July 22, 1899.*

— Fish shooting in Samoan Seas. *Forest and Stream, September 20, 1900.*

— Forest frills and furbelows. *Forest and Stream, February 14, 1903.*

— Germany's man in Samoa. *New York Sun, July 24, 1899.*

— Klein the American. *New York Press, February 12, 1899.*

— Litia's war claim. *New York Tribune, June 9, 1901.*

— Lloyd Osbourne on Samoa: his ignorance or misrepresentation of local conditions exposed. *New York Sun, June 19, 1899.*

— Malietoa on Samoan partition. *New York Independent, January 18, 1900.*

— Mata'afa's mat feast. *New York Tribune, September 1, 1901.*

— More frills and further furbelows. *Forest and Stream, February 28, 1903.*

— More trouble is in store for Samoa. *New York Press, October 15, 1899.*

— Mosquitos in the South Seas. *Forest and Stream, August 4, 1900.*

— Off on a malanga in Samoa. *Forest and Stream, February 18, 1899.*

— Rainy chase of the robber crab. *Forest and Stream, December 20, 1902.*

— Repeated history in Samoa. *New York Independent, October 19, 1899.*

— Romance and reality in Samoa. *Burlington (Iowa) Saturday Evening Post, July 14, 1900.*

— Samoa 'Uma: where life is different. *New York: Forest and Stream Publishing Company, 1902, pp. 295.*

— Samoan dressmakers. *New York Tribune, November 17, 1901.*

Churchill, Llewella Pierce. Samoan family relations. *New York Times*, April 16, 1899.

- Samoan pigeon shooting. *Forest and Stream*, June 2, 1900.
- Samoan scenes. *New York Mail and Express*, April 22, 1899.
- Shooting the Apolima passage. *Forest and Stream*, December 31, 1898.
- Some South Sea hoodoos. *Forest and Stream*, October 13, 1900.
- South Sea crayfish. *Forest and Stream*, August 11, 1900.
- South Sea whitebait. *Forest and Stream*, October 27, 1900.
- Sports of the Samoans. *Outing*, March, 1899.
- Starving on trackless seas. *Forest and Stream*, October 5, 1901.
- The chase of rats. *Forest and Stream*, February 17, 1900.
- The crowing snake of Samoa. *Forest and Stream*, November, 5, 1898.
- The Pagopago coaling station. *Collier's Weekly*, August 27, 1898.
- The palolo anniversary. *Forest and Stream*, November 11, 1899.
- The Samoan armies. *New York Independent*, February 16, 1899.
- The Samoan giant killer. *Forest and Stream*, May 25, 1901.
- The Samoan spy. *New York Times*, April 30, 1899.
- The sliding rock of Papase'ea. *Forest and Stream*, August 25, 1900.
- The stone whale of Safata. *Forest and Stream*, March 16, 1901.
- The swimming sisters of the sea. *Forest and Stream*, August 24, 1901.
- The vampires of the Tuasivi. *Forest and Stream*, September 30, 1899.
- The weed that catches fish. *Forest and Stream*, September 1, 1900.
- Things that creep and crawl. *Forest and Stream*, December 16, 1899.
- Through South Sea reefs. *Forest and Stream*, July 1, 1899.
- Torches on the reef. *Forest and Stream*, September 15, 1900.
- Troubles in Tutuila. *New York Tribune*, May 26, 1901.
- Tulimanu. *Forest and Stream*, January 19, 1901.
- What the fishwives saw. *Forest and Stream*, January 13, 1900.
- Women of Samoa. *New York Tribune*, July 1, 1900.
- Wreck of the schooner Lupe. *Forest and Stream*, April 8, 1899.

Churchill, William. A Samoan forest stream. *Forest and Stream*, July 9, 1898.

— A dictionary of Samoan speech. (A card manuscript of the vocabulary of Samoa with philological comparison of the cognate languages.)

— Duplication mechanics in Samoan and their functional values. *American Journal of Philology*, xxix, 33-54.

— Mata 'afa in exile. *Harper's Weekly*, xlii, 393.

* — Principles of Samoan word composition. *Journal of the Polynesian Society*, xiv, 24.

* — Root reducibility in Polynesian. *Journal of the Polynesian Society*, xv, 95; *American Journal of Philology*, xxvii, 369.

— Samoa o le Vavau: Samoan contributions to Polynesian history. (Manuscripts of Samoan legend, history, genealogy, verse, folk myth, ceremonial forms; for the greater part translations of these texts have been made; there yet remains to do the completion of the translation and annotation together with other editorial matter.)

— Samoan grammar: an evolutionary essay toward the comprehension of the speech method and linguistic mechanism of the Polynesian, a primordial language of the isolating type. (Manuscript now in course of preparation.)

* — Samoan Phonetics in the Broader Relation. *Journal of the Polynesian Society*, xvii, 79, etc.

Churchill, William. Samoan Relations IV and V. Two MSS. volumes of papers relating to the administration of the Samoan kingdom during his term as Consul-General.

—— Sport in Samoa. *Forest and Stream*, June 25, 1898.

—— Seumanutafa and Fa'atulia. *United States Naval Institute Proceedings*, xxiv, 601-603, 2 plates.

—— The Falealili cavern in Samoa. *Forest and Stream*, August 27, 1898.

* **Churchward, William B.** My Consulate in Samoa: a Record of Four Years' Sojourn in the Navigators' Islands, with Personal Experiences of King Malietoa Laupepa, his Country and his Men. London: Richard Bentley and Son, 1887, pp. xii, 403.

Davies, Rev. S. H. Diseases of Samoa. *Transactions of the Intercolonial Medical Congress of Australasia*, 1892, pp. 606-611.

Deeken, Richard. Manuia Samoa. Samoanische Reiseskizzen und Beobachtungen. Oldenburg: Gerhard Stalling (1901), pp. viii, 240. (Contains a mischievous fabrication of a migration myth bringing the Samoans from Sumatra to Samoa by the northern way of Nukuoro and Honolulu.)

Ehlers, Otto E. Samoa die Perle der Südsee à jour gefasst. Fünfte Auflage. Berlin: Hermann Paetel, 1900, pp. 195.

* **Ella, Rev. Samuel.** 'O le tala 'ia Taema ma Nafanua. *Journal of the Polynesian Society*, vi, 152.

—— Polynesian native clothing, pp. 6. (Polynesian Papers i.)

* ——— The war of Tonga and Samoa and the origin of the name Malietoa. *Journal of the Polynesian Society*, viii, 231.

* **Fraser, John.** Folk songs and myths from Samoa. *Journal of the Polynesian Society*, v, 171; vi, 19; 67, 107; vii, 15; ix, 125. (Polynesian Papers i.)

* **Friedlaender, Benedict.** Notes on the Palolo. *Journal of the Polynesian Society*, vii, 44.

Funk, Dr. Bernhard. Kurze Anleitung zum Verständniss der samoanischen Sprache; Grammatik und Vokabularium; nebst einem Anhang, Meteorologische Notizen; mit einem Plane von Apia. Berlin: Ernst Siegfried Mittler und Sohn, 1893, pp. vi, 82.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 345:

Hesse-Wartegg, Ernst von. Samoa, Bismarckarchipel und Neuguinea: drei deutsche Kolonien in der Südsee. Leipzig: J. J. Weber, 1902, pp. viii, 329. (Samoa, pp. 207-329.)

Hills, Rev. J. W. 'O 'Upu Muamua i le Tala i le Lalolagi mo e 'ua fa'atoa a'oa'o'ina i lea mata'upu. Elementary Geography. Samoa: The L. M. S. Printing and Publishing Department, Malua, 1907, pp. 66.

Ide, Henry C. Samoa. *New York Independent*, February 2, 1899.

Indra, Karl Rudolf. Südseefahrten: Schilderungen einer Reise nach den Fidschi-Inseln, Samoa und Tonga. Berlin: Wilhelm Süsserott, 1903, pp. 226. (Samoa, pp. 112-214.)

Jordan, David Starr. Informal report Samoan fishes. (Malua, Samoa): London Missionary Society print (1902), leaflet of 3 pages. (Polynesian Papers iv.)

—— Se tala 'i i 'a. The Samoan version of the foregoing, with the same notes.

—— and **Alvin Seale.** The fishes of Samoa: Description of the species found in the archipelago, with a provisional check list of the fishes of Oceania. Bulletin of the Bureau of Fisheries, xxv, pp. 173-455, plates 33-53. Washington: Government Printing Office, 1906.

Kellogg, Vernon L. The danger from mosquitoes. (*Malua, Samoa*): London Missionary Society print, 1902, leaflet of 3 pages. (Polynesian Papers iv.)

—— 'O mea faigatā 'ua tutupu i namu. The Samoan version of the foregoing with the same notes.

Krämer, Dr. Augustin. Die Samoa-Inseln: Entwurf einer Monographie mit besonderer Berücksichtigung Deutsch-Samoas. Stuttgart: E. Schweizerbart, 1902, vol. 1, xii, 509; vol. 2, x, 445, 26.

* ——— Hawaii, Ostmikronesien und Samoa. (Samoa, p. 143, 458.)

Kurze, G. Samoa: das Land, die Leute und die Mission. Berlin: Martin Warneck, 1900, pp. 108. (Polynesian Papers i.)

Marquardt, Carl. Die Tätowirung beider Geschlechter in Samoa. Mit 19 Tafeln in Lichtdruck und Photolithographie nach in Samoa aufgenommenen Original-Zeichnungen und Photogrammen. Berlin: Dietrich Reimer, 1899, pp. 32.

—— Verzeichniss einer ethnologischen Sammlung zusammengestellt in etwa 20 Jahren. Berlin: Dietrich Reimer, 1902, pp. 24.

Marriott Rev. J. 'O le Tala i le Feagaiga Tuai, e Afua mai i le Foafaina o mea 'uma e o 'o i le fa 'ai 'uga o le Feagaiga tuai. Old Testament History in the Samoan Dialect. Second Edition. Samoa: L. M. S. Printing and Bookbinding Establishment, Malua, 1905, pp. 184, 3 maps.

—— Tala i le Feagaiga Fou, e afua mai i le Fanau mai o Iesu, e o 'o i le otio Paulo. New Testament History in the Samoan Dialect. Samoa: L. M. S. Printing and Bookbinding Establishment. Malua, 1903, pp. 116, 2 maps.

Meade, New England and South Sea Islands, p. 182.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 100.

Mulligan, James H. Samoa: Government, commerce, products and people. Consular Reports, August, 1896, pp. 656-748. Washington: Government Printing Office, 1906. (Samoa Relations iii.)

Neffgen, H. Deutsch-Samoanisches Konversationsbuch. 'O le tusi-fetalia 'i fa 'asiamani ma fa 'asamoa. Leipzig: Otto Ficker, 1904, pp. iii, 64.

—— Grammatik des samoanischen Sprache nebst Lesestücken und Wörterbuch. Wien und Leipzig: A. Hartleben, n. d., pp. viii, 168.

Newell, Rev. J. E. English and Samoan vocabulary ('O le fa 'asologa 'upu Peritania 'ua fa 'asamoa). Being part iii of the Grammar and Dictionary of the Samoan Language, fourth edition, enlarged and revised. Malua, Samoa: London Missionary Society, 1905, pp. 158.

—— 'O le tusi mo aoga fa 'amasani. 'O fa 'amatalaga e aoga 'i e fia sauniuni mo a 'oga tetele. (Contains Samoan grammar, geography, English grammar.) Apia: Printed by J. H. Denvers for the London Missionary Society, 1896, pp. 62. (Polynesian Papers iv.)

—— 'O le 'Autaumafai mo Keriso. Samoa: The L. M. S. Printing and Book-binding Establishment. Malua, 1904, pp. 15. (Christian Endeavor tract.)

—— 'O Tala Fa 'a-Fagono mai Arapi. 'Ua Fa 'a-Samoa e Neueli, Faife 'au. 1. 'O le Tala 'ia Alatina ma Iona Lamepa. 2. 'O le Tala 'ia Ali Papa ma Tagata faomea e to 'afasefulu. Stories from the Arabian Nights' Entertainments: The Story of Aladdin; or, the Wonderful Lamp. 2. The History of Ali Baba, and of the Forty Robbers. Translated by the Rev. J. E. Newell. Samoa: Office of 'O le Sulu Samoa. Malua, 1906, pp. 117.

—— 'O le So 'o o Iesu: 'O Apoaopa 'iga i e 'ua fia 'avea i latou ma Tagata Moni o Iesu. The Young Disciple: A Manual for Samoan Catechumens. London: Printed by the Religious Tract Society for the London Missionary Society, 1893, pp. 72.

Newell, Rev. J. E. 'O le Tala i le Lalolagi ma ona Fa 'afanua. Samoan Geography (by Rev. J. E. Newell). 'O le lomiga fou, 1904. Printed for the Samoan District Committee of the London Missionary Society, May, 1901. Revised 1904, Third Edition. *Sydney: William Brooks & Co., pp. 107.*

Osbourne, Lloyd. The other side of the Samoan question. *New York Independent, June 15, 1899.*

Powell, Thomas. 'O le tala 'i tino o tagata ma mea ola 'ese 'ese; e i ai fo'i 'o tala 'i manu 'ua ta'ua i le Tusi Paia. A manual of zoölogy, embracing the animals of Scripture, in the Samoan dialect. *London: Unwin Brothers, 1886, pp. xvi, 348.*

Pratt, Rev. George. A grammar and dictionary of the Samoan language, with English and Samoan vocabulary. Third and revised edition. (*N. P.*): Printed by the Religious Tract Society for the London Missionary Society, 1893, pp. viii, 416.

— 'O fa 'ataoto ma tala fa 'atusa mai atunu 'u 'ese 'ese 'ua fa 'asamoaia e Palate. Fables from many lands translated into the Samoan dialect. *London: Printed by the Religious Tract Society for the London Missionary Society, 1890, pp. vi, 80.*

* **Pritchard, W. T.** Polynesian Reminiscences, chapters 3-9.

Reinecke, Dr. F. Betrachtungen über die samoanische Schöpfungsgeschichte und den Namen Samoa. *Zeitschrift für africanische und oceanische Sprachen, v. 282.*

— Samoa. *Berlin: Wilhelm Süsserott (1902), pp. viii, 312.*

Schultz, Dr. The principal rules of Samoan family and succession rights. *Samoanische Zeitung, 1905, June 3, 10, July 1, 8.*

Sebree, Capt. Uriel, U. S. N. Progress in American Samoa. *New York Independent, November 27, 1902.* (Polynesian Papers i.)

Senft von Pilsach, Baron Arnold. First quarterly report to King Malietoa. (*Apia, 1901, pp. 16.*) (Samoan Relations iii.)

— First quarterly report to the Municipal Council of Apia. (*Apia, 1901, pp. 16.*) (Samoan Relations iii.)

Sewall, Harold Marsh. The partition of Samoa and the past relations between that group and the United States. Seventh annual report of the Hawaiian Historical Society. (Hawaiian Papers iii.)

South Sea Bubbles, by the Earl and the Doctor.

* **Stair, Rev. John B.** Flotsam and Jetsam from the Great Ocean: or, Summary of Early Samoan Voyages and Settlement, with Supplementary Notes and Contents. *Extract Journal of the Polynesian Society, pp. 33.*

— Jottings on the mythology and spirit-lore of old Samoa, pp. 21. (Polynesian Papers iv.)

— Old Samoa, or, Flotsam and Jetsam from the Pacific Ocean. (*London: Religious Tract Society, 1897, pp. 296.*)

* — Palolo, a sea worm eaten by Samoans. *Journal of the Polynesian Society, vi, 141.*

* — The names and movements of the heavenly bodies. *Journal of the Polynesian Society, vii, 48.*

Stevenson, Robert Louis. A footnote to history: Eight years of trouble in Samoa. *New York: Charles Scribner's Sons, 1892, pp. x, 322.*

* **Streets, Dr. Thomas H.** Annual Report of the Surgeon-General, United States Navy, 1900, p. III. *Washington: Government Printing Office, 1901.* (Samoan Relations iii.)

Stuebel, O. Samoanische Texte, mit Beihülfe von Eingeborenen gesammelt und übersetzt von O. Stuebel. Herausgegeben von F. W. K. Müller. *Berlin: Dietrich Reimer, 1896, pp. ix, 188.*

* **Turner, George.** Samoa a hundred years ago and long before, together with notes on the cults and customs of 23 other islands in the Pacific. With a preface by E. B. Tylor. *London: Macmillan & Co., 1884, pp. xvi, 395.*

Turner, George A. 138 cases of amputation of the scrotum for elephantiasis arabum. *Glasgow Medical Journal, 1882, xvii, 410.* (Contains an interesting note on Samoan Surgery.) (Polynesian Papers iii.)

Violette, Père L. Dictionnaire Samoa-Français-Anglais et Français-Samoa-Anglais précédé d'une grammaire de la langue Samoa. *Paris: Maisonneuve et Cie., 1879, pp. xcii, 468.*

— 'O le Tusi-Lōtu (Book of Prayers). 1878.

West, Rev. Thomas. Ten years in South-Central Polynesia. (Chapter 9 deals with the founding of the Wesleyan mission in Samoa.)

* **Wilkes' Narrative**, ii, 61-154; v, 1-34.

* **Williams, John.** Narrative of Missionary Enterprises.

Woerl, Leo. Samoa: Land und Leute. *Leipzig: Woerl, 1901, pp. 48.*

Wohltmann, Dr. F. Pflanzung und Siedlung auf Samoa: Entdeckungsbericht an das Kolonial-Wirtschaftliche Komitee zu Berlin. (Contains an ingenious discussion of the former density of population in inner Samoa based on upon the evidences of secondary afforestation.) *Berlin: F. S. Mittler und Sohn, 1904, pp. 164, 20 plates, 2 maps.*

— 120 Kultur- und Vegetations-Bilder aus unseren deutschen Kolonien. (The Samoan plates number 24; the others are Kamerun 49, Togo 21, German East Africa 25.) *Berlin: William Süsserott, 1904, pp. viii, 120.*

Woodworth, William McMichael. Preliminary report on the palolo worm of Samoa, *Eunice viridis* (Gray). *Boston: Ginn & Co., 1903, pp. 7.* (Polynesian Papers i.)

— Vorläufiger Bericht über den Palolowurm. *Stuttgart: E. Schweizerbart, 1903.* (Polynesian Papers iv.)

United States. *Department of State.* Papers relating to the foreign relations of the United States, 1889. Samoan affairs, p. 179-423. (Contains texts in the Samoan language—full of errors, however—on pages 287-96, 320, 339.) (Samoan Relations iii.)

— General act by and between the United States of America, the empire of Germany and the United Kingdom of Great Britain and Ireland providing for the neutrality and autonomous government of the Samoan Islands. Concluded at Berlin June 14, 1889. *Washington: Government Printing Office, 1890, pp. 13.* (Samoan Relations iii.)

— *50th Congress, 1st session. House ex. doc. no. 238.* American rights in Samoa. Message from the President of the United States, with inclosures, in response to the resolution of the House of Representatives in relation to affairs in Samoa. April 2, 1888. 311 pp. Folded maps. (Contains texts in the Samoan language, pp. 199-209, 228, 232, 247-8, 251, 302, 304-5.) (Samoan Relations i.)

— *50th Congress, 2d session. Senate ex. doc. no. 31.* Message from the President of the United States, transmitting documents relating to the condition of affairs in Samoa. Dec. 22, 1888. 167 pp. Folded map. (Samoan Relations i.)

— *50th Congress, 2d session. Senate ex. doc. no. 68.* Message from the President of the United States, transmitting information touching affairs in Samoa. Jan. 16, 1889. 22 pp. (Samoan Relations i.)

United States. *53d Congress, 3d session. Senate ex. doc. no. 97.* Message from the President of the United States, in response to Senate resolution of Jan. 29, 1895, transmitting a report from the Secretary of State, with copies of correspondence, touching Samoan affairs. Feb. 26, 1895. 483 pp. (Contains texts in the Samoan language, p. 221, 371.) (Samoan Relations ii.)

— *53d Congress, 2d session. Senate ex. doc. no. 93.* Message from the President of the United States in response to Senate resolution of Apr. 6, 1894, transmitting a report from the Secretary of State relative to the Samoan islands, with copies of the correspondence in relation thereto. May 9, 1894. 219 pp. (Samoan Relations iii.)

— *53d Congress, 2d session. Senate ex. doc. no. 132.* Message from the President of the United States, in further response to the Senate resolution of Apr. 6, 1894, transmitting a report from the Secretary of State relative to the Samoan islands, and copies of correspondence relating thereto. July 9, 1894. 18 pp. (Samoan Relations iii.)

— Treaty between the United States of America and the government of the Samoan Islands. Friendship and Commerce. Concluded January 17, 1878. *Washington: Government Printing Office, 1878, pp. 3.* (Samoan Relations iii.)

— *Naval Commandant, Tutuila.* 'O le Fa'atonu o le kolone o Unaitē Setete 'o Tutuila ma Manu'a (The Right-Maker of the colony of the United States, Tutuila and Manu'a). Monthly, 4 pages. Vol. i, August-December, 1903; annual volumes of 12 numbers thereafter, current. In vol. i, nos. 1 and 2 the date line reads "Tutuila, Fagatogo." In no. 3 the date line is simply Fagatogo, which continues to the end of vol. 3. In vol. 4 it is "Tutuila, Pagopago" and so continues. In vol. ii, 5, the Gothic line ('O le Fa'atonu from the beginning being Old English) is broken by an ornament of crossed American ensigns and the line reads "'o le kolone o (flags) Tutuila ma Manu'a." In the next month's issue the "Unaitē Setete" is restored, a third title line is made of "Tutuila (flags) Manu'a." In vol. ii, 10, the title-head ornament is changed to a soaring eagle grasping the colors, above is "E pluribus unum" and below "tasi ae lasi," the Samoan being on a par with the Latinity of the motto which it renders. With this number appear two boxes which complete the title as current except for changes in the fonts of type, The left hand box: "'Ua lomia ma fa'asalalauina i le Kolone o Tutuila ma Manu'a i masina ta'itasi 'uma, 'ua lei fo'i sona tau" (printed and circulated in the Colony of Tutuila and Manu'a every month, and it costs nothing). The right hand box: "'Ua i ai nai tala 'i fa'atonuga ma apoapoa'iga, 'o tulafono, fa'amatalaga o le tiute 'atoa ma le laisene, tala 'i fa'amasinoga, 'o tala mai nu'u mamao, 'atoa ma isi tala 'ese'ese" (there are in it accounts of judgments and instructions, laws, reports of the duty and license tax, records of court proceedings, news from far lands and stories of various sorts).

'O pese ma vi'iga 'i le atua (Hymn book). *London: London Missionary Society, n. d., pp. 432.*

Samoanische Zeitung. (A weekly newspaper established in Apia in 1901. File very incomplete, and very little therein for the student.)

'O le Sulu Samoa (The Samoan Torch). (A monthly religious and news magazine published in Samoa by the London Mission at Malua; file very incomplete.)

The Tanumafili Succession. 3 foolscap volumes of newspaper clippings recording the troubles in 1899 from the death of Malietoa Laupepa to the partition of the kingdom.

'O le Tala i le Lotu Mamona. *Samoa: Printed at the L. M. S. Press, Malua, 1905, pp. 19.* (A Tract against the Mormons.)

'O le Tusi Paia, 'o le Feagaiga Tuai ma le Feagaiga Fou lea, 'ua fa'asamoaia, (The Holy Scripture, namely the Old Testament and the New Testament, done into Samoan.) London; Printed for the British and Foreign Bible Society, 1887, pp. iv, 1140.

* **Turner, George.** Comparative vocabulary of 127 words. Samoa, p. 354.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 123.)

Text, John iii: 16. Alexander: Islands of the Pacific, p. 501.

SANGUIR.

* **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.

SANTA CRUZ GROUP.

* **Markham, A. H.** New Hebrides and Santa Cruz groups. *Journal of the Royal Geographical Society*, xlii, 213. (Polynesian Papers v, 108.)

MEADE, New Zealand and South Sea Islands, p. 268.

DENI.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Grammar. Melanesian Languages, p. 486.

NIFILOLE.

* **Codrington, R. H.** Comparative Vocabulary of 70 words. Melanesian Languages, p. 39.

* ——— Grammar, Melanesian Languages, p. 493.

SOLOMON ISLANDS.

Bülow, W. von. Einige Bemerkungen zu dem Artikel "Die Sprache von Moi-ki." *Zeitschrift für afrikanische und oceanische Sprachen*, iv, 146.

Lancaster, G. B. The Altar Stairs. *New York: Doubleday, Page and Co., 1908, pp. viii, 323.* (Contains a thread of story of life of the islanders in the northern Solomons.)

* **Morton, Alex.** Solomon Island notes. *Linnean Society of New South Wales*, vii, 59. (Polynesian Papers v, 126.)

* **Parkinson, R.** Die deutschen Salomonsinseln nebst Nissan und Carteretinseln. (Dreissig Jahre in der Südsee, pp. 451-512.)

Ray, Sidney H. Mittheilungen über drei Dialekte der Salomon-Inseln (Buka, Ugi, Moi-ki). *Zeitschrift für afrikanische und oceanische Sprachen*, ii, 54.

CONTRARIETE.

Meade, New Zealand and South Sea Islands, p. 271.

EDDYSTONE.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

FLORIDA.

Ray, Sidney H. Texts in the languages of the Solomon Islands. *Zeitschrift für afrikanische und oceanische Sprachen*, iii, 103.

* **Codrington, R. H.** Comparative vocabulary of 70 words in the Gela dialect. Melanesian Languages, p. 39.

* ——— Gela grammar. Melanesian Languages, p. 522.

Gabelentz, H. C. von der. Die melanesischen Sprachen (Anudha), **Meade, New Zealand and South Sea Islands, p. 276.**

GUADALCANAR.

Gabelentz, H. C. von der. Die Melanesischen Sprachen.

Meade, New Zealand and South Sea Islands, p. 275.

MALANTA.

* **Codrington, R. H.** Comparative vocabulary of 70 words in the dialects of Saa, Bululaha and Alite. *Melanesian Languages*, p. 39.

* ——— Saa Grammar. *Melanesian Languages*, p. 516.

Gabelentz, H. C. von der. Die melanesischen Sprachen (Mara Ma-Siki).

NEW GEORGIA.

* **Codrington, R. H.** Comparative vocabulary of 61 words. *Melanesian Languages*, p. 39.

SAN CRISTOVAL.

* **Codrington, R. H.** Comparative vocabulary of 70 words in the Wango dialect. *Melanesian Languages*, p. 38.

* ——— Wango grammar. *Melanesian Languages*, p. 505.

* ——— Comparative vocabulary of 70 words in the Fagani dialect. *Melanesian Languages*, p. 39.

* ——— Fagani grammar. *Melanesian Languages*, p. 499.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

Meade, New Zealand and South Sea Islands, p. 273.

SAVO.

* **Codrington, R. H.** Comparative vocabulary of 70 words. *Melanesian Languages*, p. 39.

* ——— Grammar. *Melanesian Languages*, p. 559.

UJI.

Meade, New Zealand and South Sea Islands, p. 273.

ULAWA.

* **Codrington, R. H.** Comparative vocabulary of 70 words. *Melanesian Languages*, p. 39.

* ——— Grammar. *Melanesian Languages*, p. 512.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

VATURANGA.

* **Codrington, R. H.** Comparative vocabulary of 70 words. *Melanesian Languages*, p. 39.

* ——— Grammar. *Melanesian Languages*, p. 539.

YSABEL.

* **Codrington, R. H.** Comparative vocabulary of 70 words in the Bugotu dialect. *Melanesian Languages*, p. 39.

* ——— Bugotu grammar. *Melanesian Languages*, p. 546.

* ——— Comparative vocabulary of 70 words in the Ngao dialect. *Melanesian Languages*, p. 39.

* ——— Ngao grammar. *Melanesian Languages*, p. 555.

Gabelentz, H. C. von der. Die melanesischen Sprachen (Mahaga).

Meade, New Zealand and South Sea Islands, p. 279.

SULU ISLANDS.

* **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.

SUWARROW.

Churchill, Llewella Pierce. The heart of Savagery. *New York Sun*, May 8, 1898.

Williams, John C. What befell on Suwarrow, 1858. (Manuscript record of a consular court holden in Apia to examine into the murder of three pearlers on Suwarrow, certified under seal of H. B. M. consulate at Apia. The manuscript bound is with the Polynesian Society Library, a copy in Polynesian Papers iii.)

TAHITI.

- * **Barrow, John.** The Eventful History of the Mutiny of the Bounty.
- * **Cook**, book 3, chap. 1-9.
- * **Elias**, Polynesian Researches.
- Hartwig, Dr. Georg.** Die Inseln des grossen Oceans, p. 155.
- Jaussen, Mgr. Tepano.** Grammaire et Dictionnaire de la Langue Maorie, dialecte Tahitien. *Paris: Neia i te Nenei Raa no Belin (printed at the Imprimerie Belin Frères à St. Cloud), 1898, pp. 388.*
- Lafond de Lurey, Captain Gabriel.** Voyages autour du Monde et Naufrages Célèbres, vol. 3, chap. 6-9. *Paris, 1844.*
- Meinecke, Dr. Carl E.** Die Inseln des stillen Oceans, ii, 151.
- * **Melville, Herman.** Omoo. *New York: United States Book Company, 1892, pp. xi, 365.*
- Murray**, Martyrs of Polynesia, chap. 2.
- * **Perkins, Edward T.** Na Motu.
- * **Pritchard**, Polynesian Reminiscences.
- South Sea Bubbles, by the Earl and the Doctor.
- Stoddard, Charles Warren.** South Sea Idyls. *New York: Charles Scribner's Sons, 1892, pp. x, 340.*
- The Island of Tranquil Delights. *Boston: Herbert B. Turner and Co., 1904, pp. 318.*
- Taylor**, Voyage of the Columbia, vol. 2, section ix.
- Te Bibilia Mo 'a Ra, oia te Faufaa Tahito e te Faufaa Apî Ra, Iritihia ei Parau Tahiti. *Okefora: Neia i te Neneiraa Kalarenedona, na te Taieti Bibilia i Beretani e te Mau Fenua Atoa i Faatupukia i Lonedona ra i te Matahiti 1804, pp. 960.*
- Cover label: Te Parau a te Atua.
- * **Turner, George.** Comparative vocabulary of 127 words. Samoa, p. 354.
- * Voyage of the Duff, 56, 179, 319.
- * **Wilkes'** Narrative, ii, 1-60; iv, 272.
- Comparative vocabulary** of 15 words, source unidentified. (Polynesian Papers v, 121.)
- Text, John iii:16.** Alexander: Islands of the Pacific, p. 501.
- TAUMAKO.**
- Meinecke, Dr. Carl E.** Die Inseln des stillen Oceans, ii, 61.
- TEOR.**
- * **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.
- TIDORE.**
- * **Turner, George.** Comparative vocabulary of 59 words. Samoa, p. 354.
- TONGA.**
- Baker, Rev. Shirley Waldemar.** An English and Tongan Vocabulary, also a Tongan and English Vocabulary, with a List of Idiomatic Phrases; and Tongan Grammar. *Auckland, N. Z.: 1897, pp. vi, 212, 44.*
- Chevron, Père.** Koe Gaohi Talanoa meihe Tohi Tapu, kihe Mama Motua, moe Fuakava Foou, i he Lea Fakatoga (The story of creation from the Holy Scriptures, the old and the new dispensation, in the Tongan language), 1876.
- * **Cook**, book 2, chap. 4-11.
- Hartwig, Dr. Georg.** Die Inseln des grossen Oceans, p. 365.
- Indra, Karl Rudolf.** Südseefahrten. (Tonga, p. 214-226.)

Lawry, Rev. Walter. Friendly and Feejee Islands: a Missionary Visit to Various Stations in the South Seas, in the Year MDCCCXLVII: With an Appendix Containing Notices of the Political Constitution, Population, Productions, Manners, Customs, and Mythology of the People, and of the State of Religion among Them. Edited by the Rev. Elijah Hoole. *London: John Mason, MDCCCL, pp. 303, 1 map, 6 plates.*

Meade, New Zealand and South Sea Islands, p. 203, 297.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 62.

Murray, Martyrs of Polynesia, chap. i.

* **Thomson, Basil C.** Savage Island, pp. 152-234.

* **[Veeson, George.]** An Authentic Narrative of Four Years' Residence at Tongataboo, one of the Friendly Islands, in the South-Sea, by..... Who Went Thither in the Duff, Under Captain Wilson, in 1796: With an Appendix by an Eminent Writer (Rev. Thomas Scott). (Veeson's narrative was written by Rev. Mr. Pigott of Nottingham.) *London: Longmans and others, 1810, pp. xv, 235, 1 map, 1 plate.*

* Voyage of the Duff, 92, 227.

* **West, Rev. Thomas.** Ten Years in South-Central Polynesia: Being reminiscences of a personal mission to the Friendly Islands and their dependencies. Illustrated with a portrait (King George Tubou) and maps (chart of Tonga, harbor of Vavau). *London: James Nisbet & Co., 1865, pp. xvi, 500.*

Williams, John. Narrative of Missionary Enterprises.

* **Turner, George.** Comparative vocabulary of 127 words. Samoa, p. 354.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 122.)

Koe Jiokalafi o e Tohi Tabu. Ke ako aki i he Gaahi Lautohi i Toga ni. (The geography of the Holy Scriptures. To teach with in the schools of Tonga.) *Vavau: Printed at the Wesleyan Mission Press, Ntiau, 1843, pp. 44.*

Koe Tohi Tabu Katoa: aia oku i ai ae Tohi Tabu Motua, bea moe Tohi oe Fuakava foou. Koe hiki ki he lea fakatoga e he kau faifekau. *Lonitoni: Koe buluji e he Faahiga oku Faa buluji ae Tohi tabu i he Lea Faka-igilani moe gaahi Lea kehekehe o mamani, 1884, pp. 831, 256.* (The Tongan Bible.)

The Criminal and Civil Code of the Kingdom of Tonga. Codified and passed by the Legislative Assembly, sanctioned by his Majesty, and constituted the sole law of Tonga on November 15th, 1891, when all previous enactments were repealed. *By authority: Printed for the Tongan Government by H. Brett, Auckland, 1891, pp. vi, 140, xxiii, iii.*

Text, John iii: 16. Alexander: Islands of the Pacific, p. 502.

TONGAREWA.

* **Lamont, E. H.** Wild Life amongst the Pacific Islanders. *London: Hurst & Blackett, 1867.*

Smith, S. Percy. Tongarewa, or Penryhn Island, and its People. *Transactions of the New Zealand Institute, xxii, 85.* (Polynesian Papers iv.)

TORRES ISLANDS.

* **Codrington, R. H.** Comparative vocabulary of 70 words in the Lo dialect. *Melanesian Languages, p. 39.*

* ——— Lo grammar. *Melanesian Languages, p. 391.*

TUBUAI ISLANDS.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 193.

RAPA ITI.

Hall, John Vine. On the island of Rapa (chart and sketches). *Transactions and Proceedings of the New Zealand Institute*, i, 128. (Polynesian Papers v, 31.)

TUKOPIA.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 57.

UNION GROUP.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 430.

* Wilkes' Narrative v, chap. 1.

FAKAAFO.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 127.

* **Turner, George.** Comparative vocabulary of 113 words. Samoa, p. 354.

* ——— Notes. Samoa, p. 267.

UVEA.

A. C. Dictionnaire Latin-Uvea à l'usage des élèves du collège de Lano par les missionnaires maristes revu par le P. A. C., prêtre mariste. *Paris: Librairie Poussielgue Frères*, 1886, pp. iv, 186.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 92.

* **West, Rev. Thomas.** Ten years in South-Central Polynesia, p. 194.

Ko te Tohi-Lotu katoliko Faka-Uvea (Book of Catholic prayers). *Fribourg en Bado: B. Herder*, 1878, pp. xxviii, 504.

* **Wilkes'** Narrative, ii, 157.

VITI.

A. C. Essai de grammaire de la langue de Viti d'après les manuscrits des missionnaires maristes coordonnés. Œuvre de Saint-Jérôme pour la publication des travaux philologiques des missionnaires, deuxième fascicule, pp. 141-288. *Paris: Poussielgue Frères*, 1884. (Polynesian Papers ii.)

Ai Vola ni Veiyalayalati Vou i Jisu Karisito, na noda Turaga kei na nodai Vakabula. *Sa Tabaki mai Lodon, e Piritalia*, 1901. (Fijian New Testament, Revised Edition of 1899, 9000 Reprinted 1908.) Pp. 284.

Burke, Walter. The fire-walkers of Fiji. *Frank Leslie's Popular Monthly*, 1903, 586. (Polynesian Papers i.)

Churchill, William. A Princess of Fiji. *New York: Dodd, Mead & Co.*, 1892, pp. iv, 352.

* ——— Grimshaw's Fiji and its possibilities: Review. *Bulletin Amer. Geog. Soc.*, xl, 247.

Gabelentz, H. C. von der. Die melanesischen Sprachen.

Grimshaw, Beatrice. Fiji and its possibilities. (From Fiji to the cannibal islands.) *New York: Doubleday, Page & Co.*, 1907, pp. xiii, 315, 48 plates.

Hartwig, Dr. Georg. Die Inseln des grossen Oceans, p. 391.

Hazlewood, David, and **James Calvert.** A Fijian-English dictionary and a grammar of the language. By the late David Hazlewood, Wesleyan missionary. Second edition, with map, edited by James Calvert. *London: Sampson Low, Marston and Co.* (1872), pp. 282, 64.

Horne, John. A Year in Fiji, or an Inquiry into the Botanical, Agricultural, and Economical Resources of the Colony: Published at the Request of the Hon. Sir A. H. Gordon, G.C.M.G., Governor of Fiji. *London: H. M. Stationery Office*, 1881, pp. vi, 297, map of Fiji.

Indra, Karl Rudolf. Südseefahrten, p. 23-112.

Lawry, Rev. Walter. Friendly and Feejee Islands.

Meade, New Zealand and South Sea Islands, pp. 212, 316.

Meinecke, Dr. Carl E. Die Inseln des stillen Oceans, ii, 1.

Moore, Rev. William. Handbook of the Fijian Language. *Levuka: G. L. Griffiths, 1881, pp. 40.*

Pritchard, Polynesian Reminiscences, chapters 10-18.

Rowe, George Stringer. A missionary among cannibals; or, the life of John Hunt, who was eminently successful in converting the people of Fiji from cannibalism to Christianity. *New York: Hunt and Eaton, n. d., pp. 286, 1 plate.*

* **Smythe, Mrs. S. M.** Ten Months in the Fiji Islands: with an Introduction and Appendix by Col. W. J. Smythe, R.A. *Oxford and London: John Henry and James Parker, 1864, pp. x, xviii, 282, 4 maps, 10 plates, 2 cuts.*

* **West, Rev. Thomas.** Ten years in South-Central Polynesia, p. 391.

* **Williams, Thomas,** and **James Calvert.** Fiji and the Fijians: edited by George Stringer Rowe. *New York: D. Appleton and Co., 1859, pp. x, 551, map of Fiji, 10 plates, 29 cuts.*

* **Handbook to Fiji,** giving some information concerning the government, legislation, history, geography, land titles, religion, population, education, institutions, trade, agriculture, and climate of the colony. With a few notes setting forth the special advantages which the colony presents to intending settlers. *By authority: Printed at the Government Printing Office, Suva, 1892, pp. 78, with map.* (Polynesian Papers ii.)

* **Turner, George.** Comparative vocabulary of 130 words. Samoa, p. 354.

* **Codrington, R. H.** Comparative vocabulary of 70 words. Melanesian Languages, p. 39.

Comparative vocabulary of 15 words, source unidentified. (Polynesian Papers v, 122.)

Text, John iii: 16. Alexander: Islands of the Pacific, p. 502.

